Texas Commission on Environmental Quality

Edwards Aquifer Application Cover Page

Our Review of Your Application

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with 30 TAC 213.

Administrative Review

- Edwards Aquifer applications must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.
 - To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: http://www.tceq.texas.gov/field/eapp.
- 2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
- 3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
- 4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.
 - An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.
- 5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
- 6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

Technical Review

- 1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
- 2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

- clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.
- 3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
- 4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

Mid-Review Modifications

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity Name: Hill Country Forensics				2. Regulated Entity No.:					
3. Customer Name: Forensic Spaces LLC				4. Customer No.:					
5. Project Type: (Please circle/check one)	New		Modification		Extension		Exception		
6. Plan Type: (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXP EXT Technical Optional Er Clarification Measures		Optional Enhanced Measures
7. Land Use: (Please circle/check one)	Resider	ıtial	Non-r	Non-residential 8. Sit		e (acres):	2.79		
9. Application Fee:	\$4,000)	10. Po	10. Permanent BMP(s):			s):	Batch Detention	
11. SCS (Linear Ft.):	n/a		12. AS	12. AST/UST (No. Tanks):			ıks):	n/a	
13. County:	William	nson	14. Watershed:					Berry Creek (San Gabriel River)	

Application Distribution

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the "Texas Groundwater Conservation Districts within the EAPP Boundaries" map found at:

http://www.tceq.texas.gov/assets/public/compliance/field_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Region						
County:	Hays	Travis	Williamson			
Original (1 req.)			.X.			
Region (1 req.)		_	<u>X</u> _			
County(ies)			<u>X</u> .			
Groundwater Conservation District(s)	Edwards Aquifer AuthorityBarton Springs/ Edwards AquiferHays TrinityPlum Creek	Barton Springs/ Edwards Aquifer	NA			
City(ies) Jurisdiction	AustinBudaDripping SpringsKyleMountain CitySan MarcosWimberleyWoodcreek	AustinBee CavePflugervilleRollingwoodRound RockSunset ValleyWest Lake Hills	AustinCedar ParkFlorence X_Georgetown (ETJ)JerrellLeanderLiberty HillPflugervilleRound Rock			

San Antonio Region					
County:	Bexar	Comal	Kinney	Medina	Uvalde
Original (1 req.)					
Region (1 req.)			_		
County(ies)					
Groundwater Conservation District(s)	Edwards Aquifer Authority Trinity-Glen Rose	Edwards Aquifer Authority	Kinney	EAA Medina	EAA Uvalde
City(ies) Jurisdiction	Castle HillsFair Oaks RanchHelotesHill Country VillageHollywood ParkSan Antonio (SAWS)Shavano Park	Bulverde Fair Oaks Ranch Garden Ridge New Braunfels Schertz	NA	San Antonio ETJ (SAWS)	NA

I certify that to the best of my knowledge, that the apapplication is hereby submitted to TCEQ for adminis	oplication is complete and accurate. This strative review and technical review.
Landon Cole Allen	
Print Name of Customer/Authorized Agent	
Lole alle	07-16-2024
Signature of Customer/Authorized Agent	Date

FOR TCEQ INTERNAL USE ONLY				
Date(s)Reviewed:	Date Administratively Co.	mplete:		
Received From:	Correct Number of Copies	s:		
Received By:	Distribution Date:			
EAPP File Number:	Complex:			
Admin. Review(s) (No.):	No. AR Rounds:			
Delinquent Fees (Y/N):	Review Time Spent:			
Lat./Long. Verified:	SOS Customer Verificatio	n:		
Agent Authorization Complete/Notarized (Y/N):	Fee Payable to TCE	Q (Y/N):		
Core Data Form Complete (Y/N):	Check: Signed (Y/N):			
Core Data Form Incomplete Nos.:	Less than 90 da	nys old (Y/N):		

General Information Form

Texas Commission on Environmental Quality

For Regulated Activities on the Edwards Aquifer Recharge and Transition Zones and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B) Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **General Information Form** is hereby submitted for TCEQ review. The application was prepared by:

Pri	nt Name of Customer/Agent: <u>Landon Cole Allen, P.E.</u>
Da	te: <u>2024-06-27</u>
Sig	nature of Customer/Agent:
L	ole alle
PI	roject Information
1.	Regulated Entity Name: Hill Country Forensics
2.	County: Williamson
3.	Stream Basin: Berry Creek (tributary to San Gabriel River)
4.	Groundwater Conservation District (If applicable): n/a
5.	Edwards Aquifer Zone:
	Recharge Zone Transition Zone
6.	Plan Type:
	WPAP SCS □ UST □ Modification □ Exception Request

7.	Customer (Applicant):
	Contact Person: Dr. Satish Chundru Entity: Forensic Spaces LLC Mailing Address: 12160 W. Parmer Lane, Suite 130-108 City, State: Cedar Park, TX Telephone: 305-239-8081 Email Address: satchundru@yahoo.com
8.	Agent/Representative (If any):
	Contact Person: Landon Cole Allen, P.E. Entity: Akron Consulting LLC Mailing Address: 431 N Center St City, State: Longview, TX Telephone: 903-452-0637 Email Address: colea@akron-consulting.com
9.	Project Location:
	 ☐ The project site is located inside the city limits of ☐ The project site is located outside the city limits but inside the ETJ (extra-territorial jurisdiction) of Georgetown, Tx. ☐ The project site is not located within any city's limits or ETJ.
10.	The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.
	The project is located at 136 Market St in Georgetown, TX, and is currently a vacant lot on the south side of Market St in between Lone Star Communications and The Nine Minds Group.
11.	Attachment A – Road Map. A road map showing directions to and the location of the project site is attached. The project location and site boundaries are clearly shown on the map.
12.	Attachment B - USGS / Edwards Recharge Zone Map. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached. The map(s) clearly show:
	 ☑ Project site boundaries. ☑ USGS Quadrangle Name(s). ☑ Boundaries of the Recharge Zone (and Transition Zone, if applicable). ☑ Drainage path from the project site to the boundary of the Recharge Zone.
13.	The TCEQ must be able to inspect the project site or the application will be returned. Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment.

\boxtimes Survey staking will be completed by this date: <u>09/30/2024</u>
14. Attachment C – Project Description. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:
 ✓ Area of the site ✓ Offsite areas ✓ Impervious cover ✓ Permanent BMP(s) ✓ Proposed site use ✓ Site history ✓ Previous development ✓ Area(s) to be demolished
15. Existing project site conditions are noted below:
 □ Existing commercial site □ Existing industrial site □ Existing residential site ○ Existing paved and/or unpaved roads □ Undeveloped (Cleared) ○ Undeveloped (Undisturbed/Uncleared) □ Other:
Prohibited Activities
16. I am aware that the following activities are prohibited on the Recharge Zone and are not proposed for this project:
 Waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
(2) New feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
(3) Land disposal of Class I wastes, as defined in 30 TAC §335.1;
(4) The use of sewage holding tanks as parts of organized collection systems; and
(5) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).
(6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.
17. I am aware that the following activities are prohibited on the Transition Zone and are not proposed for this project:

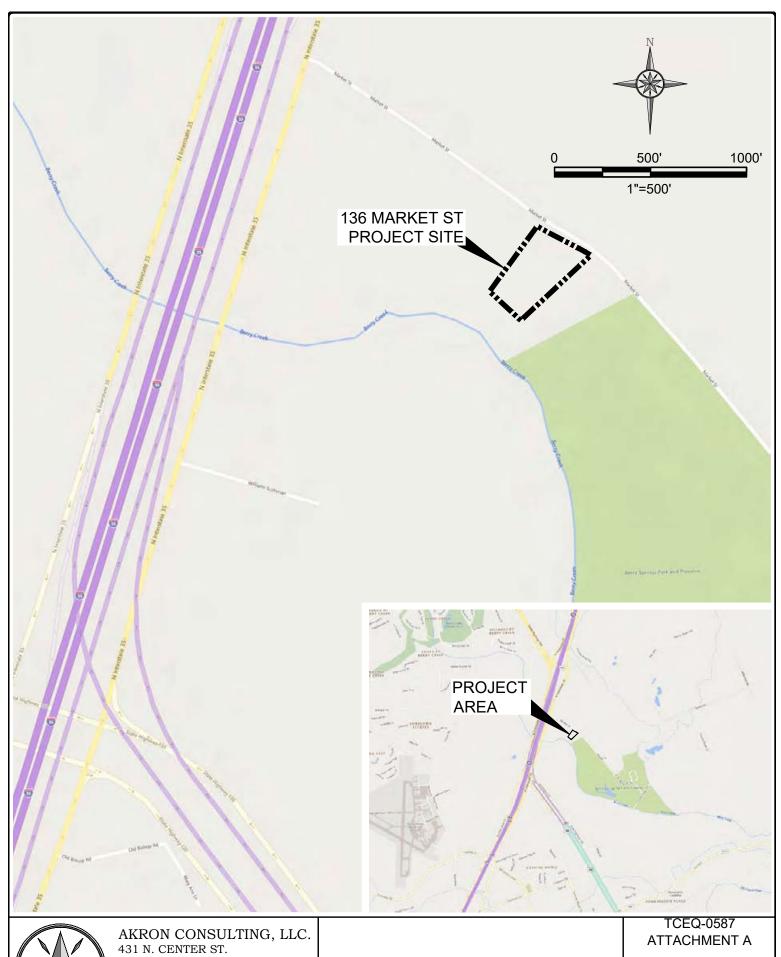
(1) Waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground

Injection Control);

- (2) Land disposal of Class I wastes, as defined in 30 TAC §335.1; and
- (3) New municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

Administrative Information

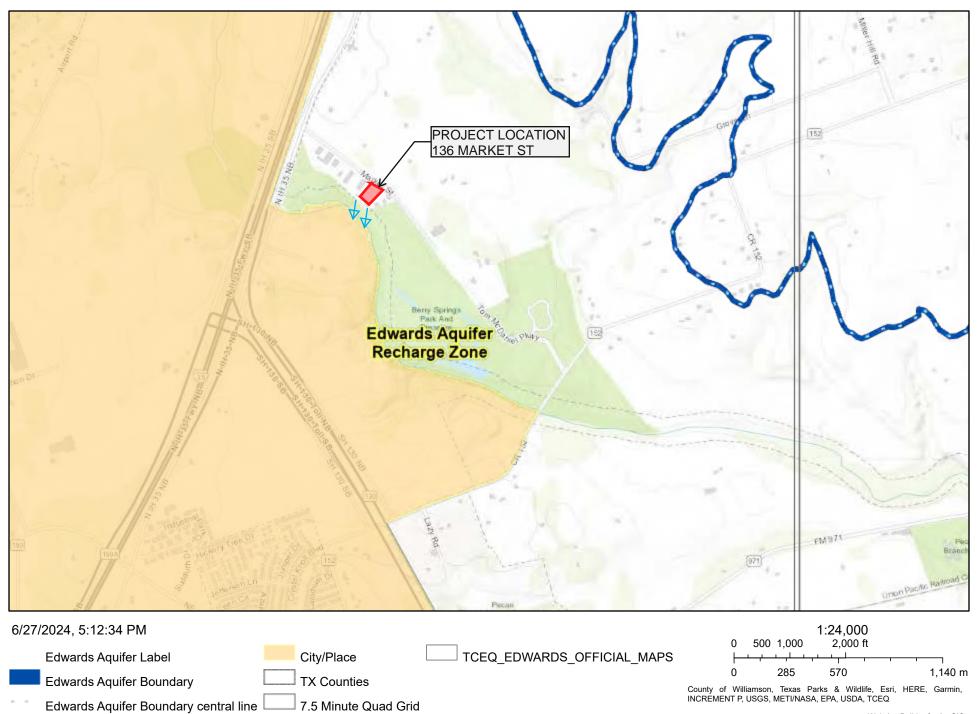
18.	The fee for the plan(s) is based on:
	 For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur. For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines. For a UST Facility Plan or Modification or an AST Facility Plan or Modification, the total number of tanks or piping systems. A request for an exception to any substantive portion of the regulations related to the protection of water quality. A request for an extension to a previously approved plan.
19.	Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:
	 ☐ TCEQ cashier ☐ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties) ☐ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)
20.	Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
21.	No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the Executive Director.



AKRON CONSULTING, LLC. 431 N. CENTER ST. LONGVIEW, TX 75601 TBPE Firm Reg. # 14014 903-720-4822 www.akron-consulting.com

ROAD MAP

Attachment B: Edwards Aquifer Map



TCEQ FORM 0587 ATTACHMENT C – PROJECT DESCRIPTION

Hill Country Forensics is a commercial development on a 2.788 acre lot located in the ETJ of Georgetown, TX. The existing site is mostly undeveloped land, with a gravel drive that loops through the tract. There is also a small pole barn on the site. Based on historical aerials, it appears that the tract may have been used as a lay down yard or storage area by the previous owner. The gravel drive and pole barn will be demolished as part of the project.

The proposed development consists of a 10,267 sf building, associated parking, sidewalks, curb, dumpster enclosure, covered parking area, and a fire lane. Although the site is laid out to accommodate a future shell building, the shell building is not a part of this scope. For calculation purposes, the total existing impervious area was considered 0 since the pole barn was negligible and to be conservative. As part of the proposed development, there is construction in the ROW (driveway, sidewalk, utilities) that is included in the project site area, and not considered offsite. The total site area is 2.94 acres. The total proposed impervious area within the total site is 0.88 acres (29.9% impervious).

The property drains as overland flow to the southern portion of the property, and surface drains into the Berry Springs Park and Preserve, where the stormwater enters into Berry Creek. As mentioned previously, the only offsite area that drains through the property consists of a small portion of the ROW (0.15 acres) along market street. Since there is construction within the ROW as part of this project, that area is considered a part of the total site area.

During construction, all stormwater will be treated with temporary BMP's before leaving the site. Temporary BMP's for this project consist of silt fence, construction entrance/exit, concrete washout pit, and rock berms. All areas not proposed with impervious cover will be revegetated after construction is completed.

Batch Detention is the permanent BMP for TSS removal for this site. A SmartPond Valve from Construction Eco Services is specified as the batch detention pond outlet controller. Construction plans and TSS removal calculations are included in the application package for review. Treated sediment capacity was calculated in accordance with TCEQ regulatory guidance 348.

Geologic Assessment

Texas Commission on Environmental Quality

For Regulated Activities on The Edwards Aquifer Recharge/transition Zones and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Print Name of Geologist: M. Kevin Denson	Telephone: <u>512 442-1122</u>
Date: <u>April 19, 2024</u>	Fax: <u>512-442-1181</u>
Representing: <u>Terracon Consultants, Inc.</u> (Name of number)	Company and TBPG or TBPE registration
Signature of Geologist:	

Regulated Entity Name: 136 Market Street, Georgetown, Williamson County, TX

Project Information

	-	
1.	Date(s) Geologic Assessment was performed: April	il 4, 2024
2.	Type of Project:	
3.	WPAP SCS Location of Project:	AST UST
	Recharge Zone Transition Zone Contributing Zone within the Transition Zone	

4.	Attachment A - Geologic Assessment Table. Completed Geologic Assessment Table
	(Form TCEQ-0585-Table) is attached.

5.	$oxed{\boxtimes}$ Soil cover on the project site is summarized in the table below and uses the SCS
	Hydrologic Soil Groups* (Urban Hydrology for Small Watersheds, Technical Release No.
	55, Appendix A, Soil Conservation Service, 1986). If there is more than one soil type on
	the project site, show each soil type on the site Geologic Map or a separate soils map.

Table 1 - Soil Units, Infiltration Characteristics and Thickness

Soil Name	Group*	Thickness(feet)
EaD	D	0-1
KrA	С	3-6

* Soil Group Definitions (Abbreviated)

- A. Soils having a high infiltration rate when thoroughly wetted.
- B. Soils having a moderate infiltration rate when thoroughly wetted.
- C. Soils having a slow infiltration rate when thoroughly wetted.
- D. Soils having a very slow infiltration rate when thoroughly wetted.
- 6. Attachment B Stratigraphic Column. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
- 7. Attachment C Site Geology. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
- 8. Attachment D Site Geologic Map(s). The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1": 400'

Applicant's Site Plan Scale: 1" = _'
Site Geologic Map Scale: 1" = 60'
Site Seils Map Scale (if more than 1 soil type): 1" =

Site Soils Map Scale (if more than 1 soil type): 1'' = 125'

9. Method of collecting positional data:

☐ Global Positioning System (GPS) technology.
☐ Other method(s). Please describe method of data collection: _____

10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.

11. Surface geologic units are shown and labeled on the Site Geologic Map.

12	Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
\triangleright	Geologic or manmade features were not discovered on the project site during the field investigation.
13. 🛭	The Recharge Zone boundary is shown and labeled, if appropriate.
	Il known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If oplicable, the information must agree with Item No. 20 of the WPAP Application Section.
	There are (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.) The wells are not in use and have been properly abandoned. The wells are not in use and will be properly abandoned. The wells are in use and comply with 16 TAC Chapter 76. There are no wells or test holes of any kind known to exist on the project site.
Adr	ministrative Information

15. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.

ATTACHMENT A

NO FEATURES OBSERVED

GEOL	OGIC AS	SEOLOGIC ASSESSMENT TABLE	ENT T	ABLE		a.	ROJE	CT NA	WE: 136	Mark	cet Stre	et, Geor	getow	PROJECT NAME: 136 Market Street, Georgetown, Williamson County, Texas	n Cour	ıty, Texas	1	
LOCAT	NOI		FEATU	FEATURE CHA	IARACTERISTICS	RISTIC	တ								EVAL	.UATION	PHYSIC	EVALUATION PHYSICAL SETTING
1A	18.	10.	ZA	2B	8		4		25	5A	9	7	8₩	88	8	10	11	12
FEATURE ID	LATITUDE	CONGITUDE	FEATURE	POINTS	FORMATION	DIMENS	DIMENSIONS (FEET)		REND GREES)	WOO .	THEND DOM (NOFT) (FEET)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	TOTAL SENSITIVITY	CATCHM ENT AREA (ACRES)	TOPOGRAPHY
						×	>	2		10						<40 >40	61.6	21.6
								-										
* DATUM	NAD27																	

2A TYPE	TYPE	2B POINTS	8 8	8A INFILLING
0	Cave	30	z	None, exposed bedrack
sc	Solution cavity	20	O	Coarse - cobbles, breakdown, sand, gravel
胀	Solution-enlarged fracture(s)	20	0	Loose or soft mud or soil, organics, leaves, sticks, dark colors
l/	Fault	20	ш	Fines, compacted clay-rich sediment, soil profile, gray or red colors
C	Other natural bedrock features	9	>	Vegetation. Give details in narrative description
MB	Manmade feature in bedrock	30	FS	Flowstone, cements, cave deposits
SW	Swallow hole	30	×	Other materials
SH	Sinkhole	20		
00	Non-karst closed depression	r _C	15	12 TOPOGRAPHY
2	Zone, clustered or aligned features	30	ਹੋ	Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Natural Resource Conservation Commission's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

utifies that am numifieders a geologist as defined by 30 TAC 213 My signatur

J of Sheet

TNRCC-0585-Table (Rev. 5-1-02)



ATTACHMENT B

Stratigraphic Column
136 Market Street
Georgetown, Williamson County, Texas

HYDROGEOLOGIC	FORMATION	THICKNESS	ГІТНОГОСУ
SUBDIVISION		(feet)	
Edwards Aquifer	Georgetown Formation	59	Nodular, fossiliferous limestone interbedded with marl

Source: Senger, Collins and Kreitler, 1990





ATTACHMENT C SITE-SPECIFIC GEOLOGY

The Geologic Assessment (GA) of the 136 Market Street site was performed by Kevin Denson, P.G. of Terracon on April 4, 2024. The site is an approximate 2.788-acre tract of vacant land located on Market Street approximately 1,400 feet east of the IH-35 frontage road in Georgetown, Williamson County, Texas. The site is currently undeveloped, with the exception of a covered gazebo area and a small concrete slab.

Exhibit 1 (attached) is a site location map depicting the site in relation to the surrounding area. The areas immediately surrounding the site are a mix of undeveloped, agricultural, residential, and commercial properties. The site is characterized as slightly to moderately sloping to the southwest and site elevation ranges from about 689 to 680 feet above mean sea level (msl).

The surficial geologic units present at the site have been identified as alluvium and fluviatile terrace deposits, underlain by the Georgetown Formation (Kgt). Exhibit 2 (attached) is a geologic map of the site. The site is located entirely within the recharge zone of the Edwards aquifer, and the recharge zone boundary is located approximately 3,500 feet northwest of the site. The Georgetown Formation overlies the Edwards Group and is the uppermost formation of the Edwards aquifer. Attachment B (attached) is a stratigraphic column prepared for the site. Exposure of this unit is generally obscured by the soil and vegetation present at the site. No evidence of faulting was observed on the site. Additionally, a review of aerial photographs did not reveal lineations, which typically indicate the presence of faulting. Based on a review of the Geologic Atlas of Texas Austin Sheet, the closest mapped fault is located about 150 feet east of the site. The fault trends to the northeast and is associated with the Balcones fault zone, which is comprised of normal, high-angle faults, that are generally down-thrown to the southeast. The Balcones fault zone represents the dominant structural trend of the area.

No geologic features were observed on the site. The completed Geologic Assessment form is attached as Attachment A. Due to the lack of significant sensitive recharge features observed on the site and the presence of a relatively impermeable soil cover, the potential for fluid movement to the Edwards aquifer beneath the site is considered low.

No springs were observed onsite. A review of the site maps contained in the City of Georgetown Ordinance 2015-14 indicated there are no known springs occupied by the Georgetown Salamander on the site and the nearest known occupied site is located approximately three miles southwest of the site (San Gabriel Spring).



Williamson County 1-Ft Topography - 2017

DATA SOURCES:

BATA SOURCES:
Esri Community Maps Contributors, Baylor University, County of Williamson, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Williamson County TX, Maxar, WCAD GIS Open Data Portal

Project No.:

96247107

Date: Apr 2024

Drawn By:

Reviewed By: KD



5307 Industrial Oaks Blvd. - #160 Austin, TX 78735

PH. (512) 442-1122 terracon.com

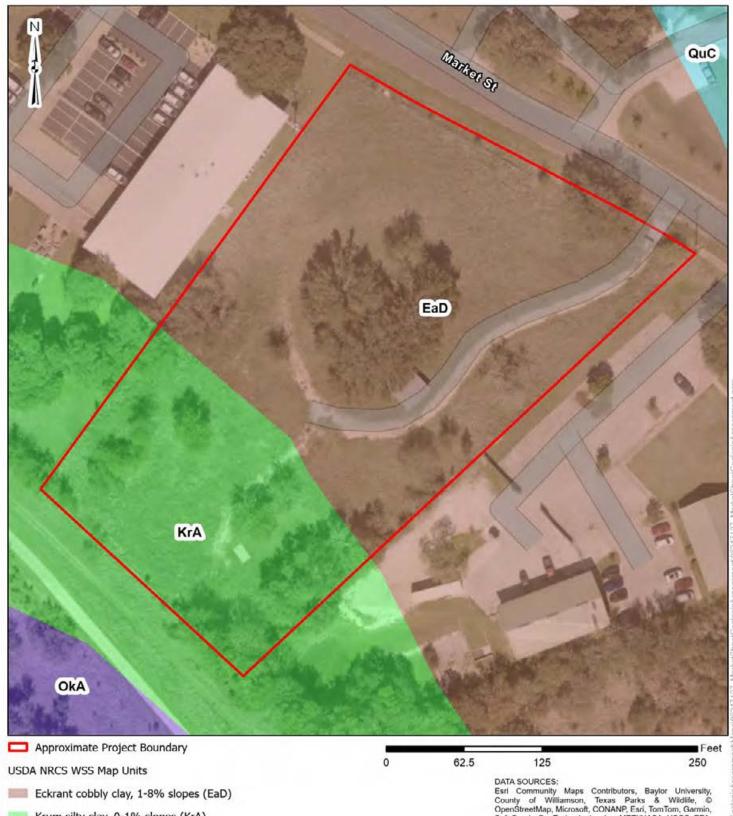
Site Specific Topography

Market Street Geologic Assessment

136 Market Street, Georgetown, Texas

Exhibit

1.0



Oakalla silty clay loam, 0-2% slopes (OkA)

Queeny clay loam, 1-5% slopes (QuC)

Project No.: 96247107

KD

Date:

Apr 2024 Drawn By:

RC Reviewed By: Fierracon

5307 Industrial Oaks Blvd. - #160 Austin, TX 78735

PH. (512) 442-1122

Krum silty clay, 0-1% slopes (KrA)

terracon.com

Esri Community Maps Contributors, Baylor University, County of Williamson, Texas Parks & Wildlife, © OpenStreetMap, Microsoft, CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, Williamson County TX, Maxar, WCAD GIS Open Data Portal, USDA NRCS Web Soil Survey

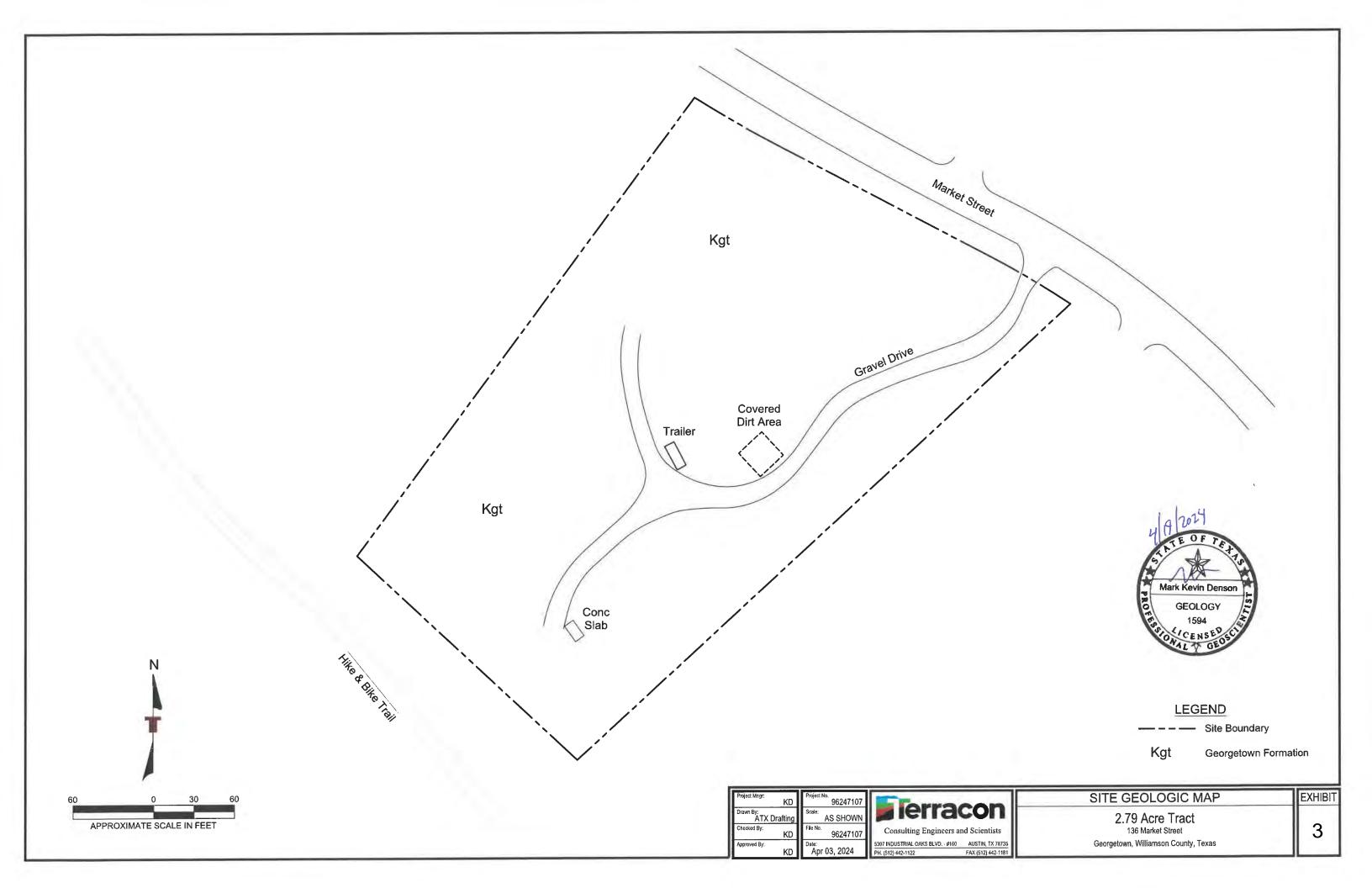
USDA Site Soil Map

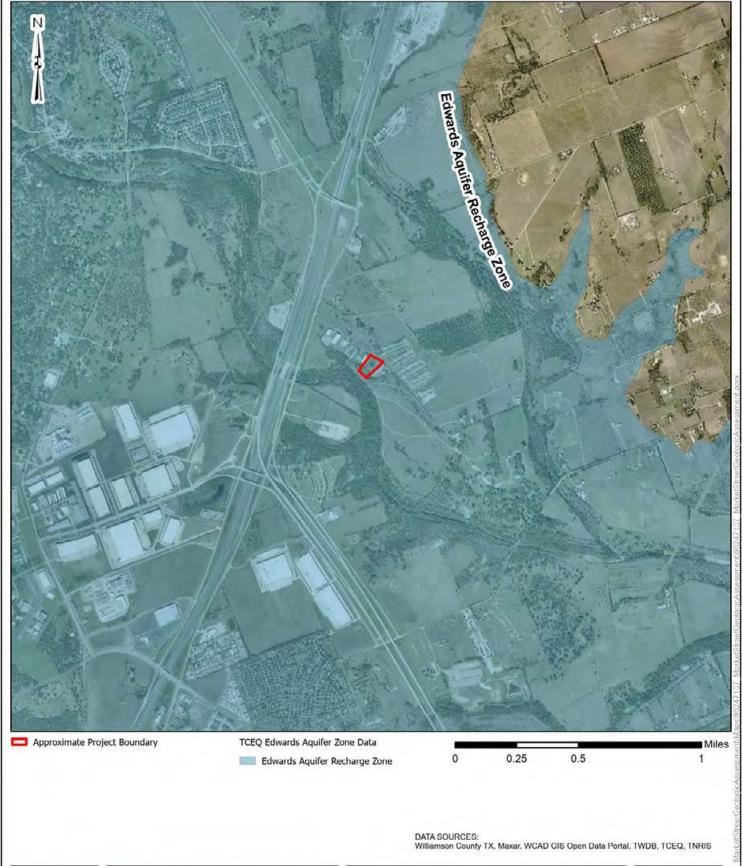
Market Street Geologic Assessment

136 Market Street, Georgetown, Texas

Exhibit

2.0





Project No.:

96247107 Date:

Apr 2024 Drawn By:

Reviewed By:

Fierracon

5307 Industrial Oaks Blvd. - #160

Austin, TX 78735

PH. (512) 442-1122

terracon.com

Edwards Aquifer Zones

Market Street Geologic Assessment

136 Market Street, Georgetown, Texas

Exhibit

4.0

Water Pollution Abatement Plan Application

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Water Pollution Abatement Plan Application Form** is hereby submitted for TCEQ review and Executive Director approval. The form was prepared by:

Print Name of Customer/Agent: <u>Landon Cole Allen</u>
Date: <u>06-26-2024</u>
Signature of Customer/Agent:
Lole alle
Regulated Entity Name: Hill Country Forensics
Regulated Entity Information

Regulated Entity Information

The type of project is:
Residential: Number of Lots: Residential: Number of Living Unit Equivalents:
Commercial
☐ Industrial ☐ Other:

- 2. Total site acreage (size of property): 2.788 (2.94 Total Project Area)
- 3. Estimated projected population:N/A
- 4. The amount and type of impervious cover expected after construction are shown below:

Table 1 - Impervious Cover Table

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	11,960	÷ 43,560 =	0.27
Parking	21153	÷ 43,560 =	0.49
Other paved surfaces	5356	÷ 43,560 =	0.12
Total Impervious Cover	38,469	÷ 43,560 =	0.88

	Total Impervious Cover	38,469	÷ 43,560 =	0.88
	Total Impervious Cov	er 0.88 ÷ Total Acreage	 <u> 2.94</u> X 100 = <u>29.9</u>% Imp e	ervious Cover
5.	Attachment A - Fa	actors Affecting Surface affect surface water an	• Water Quality . A detailed a groundwater quality the	ed description of all
6.	Only inert materia	ls as defined by 30 TAC	§330.2 will be used as fil	l material.
F	or Road Projec	cts Only		
Со	mplete questions 7 - 1	2 if this application is e	exclusively for a road proj	ject.
7.	Type of project:			
	City thoroughfare	ct. Index indicates to be dedicated in the proof of the proof of the private of	d to a municipality.	
8.	Type of pavement or	road surface to be used	:	
	Concrete Asphaltic concrete Other:	pavement		
9.	Length of Right of Wa	y (R.O.W.): feet.		
	Width of R.O.W.: L x W = $_{_{_{_{_{_{_{_{_{_{_{_{_{_{_{_{_{_}}}}}}$	feet. 3,560 Ft²/Acre =	acres.	
10	. Length of pavement a	rea: feet.		
	Pavement area	$3,560 \text{ Ft}^2/\text{Acre} = \phantom{00000000000000000000000000000000000$	acres x 100 =9	6 impervious cover.
11	. 🔛 A rest stop will be	included in this project	•	

 $\hfill \square$ A rest stop will not be included in this project.

TCEQ Executive Director. Modificat	roadways that do not require approval from the ions to existing roadways such as widening ore than one-half (1/2) the width of one (1) existing e TCEQ.
Stormwater to be generate	ed by the Proposed Project
volume (quantity) and character (quantity) occur from the proposed project is quality and quantity are based on t	cter of Stormwater. A detailed description of the uality) of the stormwater runoff which is expected to attached. The estimates of stormwater runoff he area and type of impervious cover. Include the ch pre-construction and post-construction conditions
Wastewater to be generate	ed by the Proposed Project
14. The character and volume of wastewat	er is shown below:
100% Domestic% Industrial% Commingled TOTAL gallons/day 120	120 Gallons/dayGallons/dayGallons/day
15. Wastewater will be disposed of by:	
On-Site Sewage Facility (OSSF/Septi	ic Tank):
will be used to treat and dispose licensing authority's (authorized the land is suitable for the use of the requirements for on-site serielating to On-site Sewage Facil Each lot in this project/developed size. The system will be designed.	er from Authorized Agent. An on-site sewage facility e of the wastewater from this site. The appropriate diagent) written approval is attached. It states that of private sewage facilities and will meet or exceed wage facilities as specified under 30 TAC Chapter 285 ities. ment is at least one (1) acre (43,560 square feet) in ed by a licensed professional engineer or registered ensed installer in compliance with 30 TAC Chapter
Sewage Collection System (Sewer L	ines):
to an existing SCS.	wastewater generating facilities will be connected wastewater generating facilities will be connected
☐ The SCS was previously submitt☐ ☐ The SCS was submitted with this☐ ☐ The SCS will be submitted at a label installed prior to Executive D	s application. ater date. The owner is aware that the SCS may not

The sewage collection system will convey the wastewater to the (name) Treatment Plant. The treatment facility is:
Existing. Proposed.
16. \boxtimes All private service laterals will be inspected as required in 30 TAC §213.5.
Site Plan Requirements
Items 17 – 28 must be included on the Site Plan.
17. \square The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = <u>30</u> '.
18. 100-year floodplain boundaries:
 Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled. No part of the project site is located within the 100-year floodplain. The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s): Map number 48491C028F eff. 12/20/2019
19. The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.
The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.
20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
There are (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
 The wells are not in use and have been properly abandoned. The wells are not in use and will be properly abandoned. The wells are in use and comply with 16 TAC §76.
igstyle There are no wells or test holes of any kind known to exist on the project site.
21. Geologic or manmade features which are on the site:
 All sensitive geologic or manmade features identified in the Geologic Assessment are shown and labeled. No sensitive geologic or manmade features were identified in the Geologic Assessment. Attachment D - Exception to the Required Geologic Assessment. A request and
justification for an exception to a portion of the Geologic Assessment is attached.

22. 🔀	The drainage patterns and approximate slopes anticipated after major grading activities
23. 🔀	Areas of soil disturbance and areas which will not be disturbed.
24. 🔀	Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.
25. 🖂	Locations where soil stabilization practices are expected to occur.
26. 🗌	Surface waters (including wetlands).
\boxtimes	N/A
27.	Locations where stormwater discharges to surface water or sensitive features are to occur.
\boxtimes	There will be no discharges to surface water or sensitive features.
28. 🔀	Legal boundaries of the site are shown.
Adn	ninistrative Information
29. 🔀	Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
30. 🔀	Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

TCEQ FORM 0584 ATTACHMENT A – FACTORS AFFECTING SURFACE WATER QUALITY

During construction, the potential sources of pollution that may be expected to affect the quality of storm water discharges from the site include primarily suspended solids and the release of hydrocarbons with examples as follows:

- Soil erosion due to clearing of the site.
- Oil, grease, fuel, and hydraulic fluid contamination from construction equipment and vehicle drippings.
- Trash and litter from construction workers.
- Tar, fertilizers, cleaning solvents, detergents, and petroleum-based products
- Concrete truck washouts

Post construction, the potential sources of pollution that may be expected to affect the quality of storm water discharges from the site include:

- Trash and litter from the office or dumpster area
- Dirt, dust, oil, grease, fuel, and hydraulic fluid from vehicle drippings

TCEQ FORM 0584 ATTACHMENT B – VOLUME AND CHARACTER OF STORMWATER

For the proposed design, there is 2.94 acres within the total project area watershed. In an effort to be conservative, the existing gravel drive was not taken into account for impervious cover calculations. Therefore, the existing impervious cover percentage is considered 0%. For proposed design, there is a total of 0.88 acres of impervious cover within the total project area. The resultant impervious cover calculation within the total project area is 29.9%.

TCEQ RG-348 Equation 3.11 Rv=1.72(IC)^3-1.97(IC)^2+1.23(IC)+.02

IC=0.299 Proposed Rv= 0.258

TCEQ RG-348 Table 3-3
Williamson County Average Annual Precipitation = 32 in

Annual Volume: 2.94 Acres * 43560 sf/acre*0.258*32in*(1ft/12in) = 88,109 cf

Since the impervious cover increased due to development, the total volume of stormwater increased as well. However, a detention pond is proposed to reduce the flow of stormwater back to pre-developed conditions, and is being permitted through Georgetown. The quality of the stormwater is also improved due to structural controls implemented in design (batch detention pond). Stormwater leaving the site is dispersed back to shallow concentrated flow through the use of a rock berm level spreader at the downstream end of the property.

TCEQ FORM 0584 ATTACHMENT C – SUITABILITY LETTER FROM AUTHROIZED AGENT

Department of Infrastructure County Engineer's Office 3151 SE Inner Loop, Ste B Georgetown, TX 78626 T: 512.943.3330 F: 512.943.3335



J. Terron Evertson, PE, DR, CFM

July 29, 2024

Forensic Spaces, LLC

RE: 136 Market Street, Georgetown, TX 78626 S6593 – Resource Commercial Park, Lot 5/pt, Acres 2.40

The above referenced property is located within the Edwards Aquifer Recharge Zone.

Based on the surrounding subdivisions and the soil survey for Williamson County and planning material received, this office is able to determine that the soil and site conditions of this lot is suitable to allow the use of on-site sewage facilities (OSSF). It should be noted that this office has not actually studied the physical properties of this site. Site specific conditions such as OSSF setbacks, recharge features, drainage, soil conditions, etc..., will need taken into account in planning any OSSF.

These OSSF's will have to be designed by a professional engineer or a registered sanitarian. An Edwards Aquifer protection plan shall be approved by the appropriate TCEQ regional office before an authorization to construct an OSSF may be issued. The owner will be required to inform each prospective buyer, lessee or renter of the following in writing:

- That an authorization to construct shall be required before an OSSF can be constructed in the subdivision;
- That a notice of approval shall be required for the operation of an OSSF;
- Whether an application for a water pollution abatement plan as defined in Chapter 213 has been made, whether it has been approved and if any restrictions or conditions have been placed on the approval.

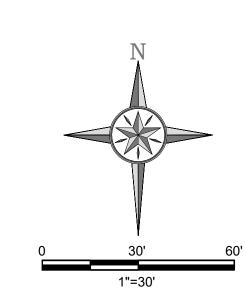
If this office can be of further assistance, please do not hesitate to call.

Sincerely,

Doug McPeters, OS 8626 Williamson County - OSSF

OS 8626



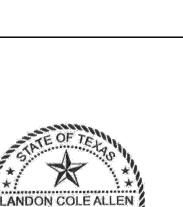


NOTES:

- 1) NO PART OF THE PROJECT SITE IS LOCATED WITHIN THE 100-YEAR FLOODPLAIN. THE 100-YEAR FLOODPLAIN BOUNDARIES FOR THE AREA CAN BE SEEN ON FEMA MAP NUMBER 48491C028F WITH AN EFFECTIVE DATE OF 12/20/2019
- 2) NO WELLS OR TEST HOLES OF ANY KIND ARE KNOWN TO EXISTING ON THE PROJECT SITE
- NO SENSITIVE GEOLOGIC OR MANMADE FEATURES WERE IDENTIFIED IN THE GEOLOGIC ASSESSMENT.
- 4) ALL DISTURBED AREA SHALL BE STABILIZED PER THE EROSION CONTROL PLAN AND NOTES.
- 5) THERE WILL BE NO DISCHARGES TO SURFACE WATER OR SENSITIVE FEATURES
- 6) THIS DRAWING SHOWS BOTH PERMANENT AND TEMPORARY BMPS PER TCEQ REQUIREMENTS. FOR CLARITY, SEE CONSTRUCTION PLANS TO BETTER DIFFERENTIATE BETWEEN TEMPORARY AND PERMANENT FEATURES. TEMPORARY BMPS ARE NOTED AS "TEMPORARY"
- 7) THE TOTAL LOAD TO TREAT PER THE TSS LOADING CALCULATIONS IS LM=766 LBS
- 8) TOTAL POST CONSTRUCTION IMPERVIOUS AREA = 0.88 ACRE









Y FOREI GEORGETOWN HILL CC

SITE

WPAP

DATE NO. REVISION

DRAWN BY: APPROVED BY: DWG NAME: JOB NO:

0584-E

TCEQ FORM 0584 ATTACHMENT D – EXCEPTION TO THE REQUIRED GEOLOGIC ASSESSMENT

Not Applicable

Temporary Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Temporary Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Landon Cole Allen, P.E.
Date: <u>07-1</u> 6-2024
Signature of Customer/Agent:
Lole alle
B. L. LE M. N. HOLLON . E

Regulated Entity Name: Hill Country Forensics

Project Information

Potential Sources of Contamination

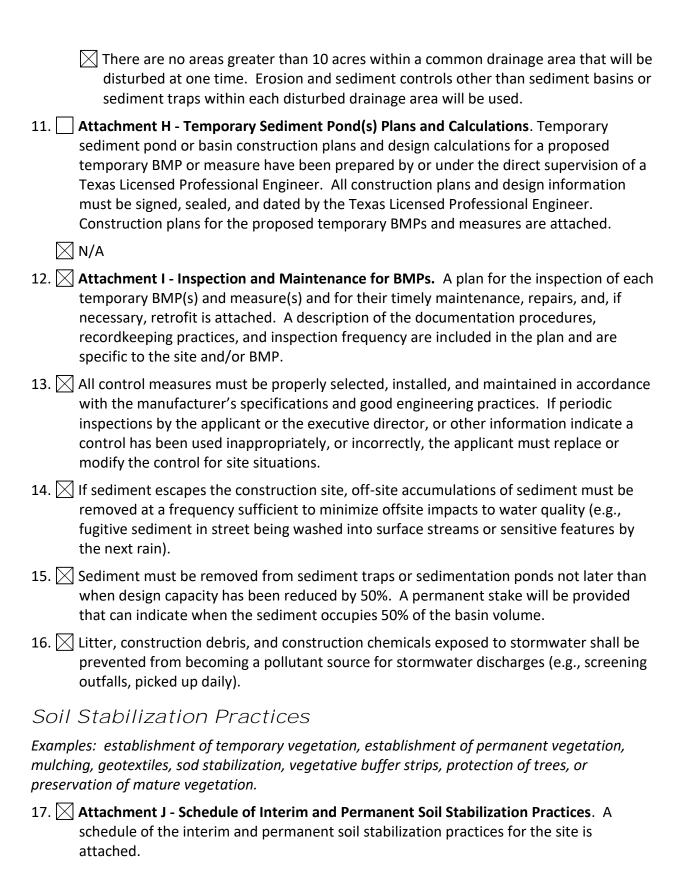
Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1.	Fuels for construction equipment and hazardous substances which will be used during construction:
	The following fuels and/or hazardous substances will be stored on the site:
	These fuels and/or hazardous substances will be stored in:
	Aboveground storage tanks with a cumulative storage capacity of less than 250 gallons will be stored on the site for less than one (1) year.

	 Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year. Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An Aboveground Storage Tank Facility Plan application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.
	igstyle igstyle Fuels and hazardous substances will not be stored on the site.
2.	Attachment A - Spill Response Actions. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
3.	Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
4.	Attachment B - Potential Sources of Contamination. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.
S	equence of Construction
5.	Attachment C - Sequence of Major Activities. A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is attached.
	 For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given. For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.
6.	Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: Berry Creek (a tributary to the San Gabriel River)
Te	emporary Best Management Practices (TBMPs)
sta coi ba	osion control examples: tree protection, interceptor swales, level spreaders, outlet abilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized instruction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment is ins. Please refer to the Technical Guidance Manual for guidelines and specifications. All ructural BMPs must be shown on the site plan.
7.	Attachment D – Temporary Best Management Practices and Measures. TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to

retain sediment on site to the extent practicable. The following information is attached:

	A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.
	A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.
	A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.
	A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.
8.	The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.
	Attachment E - Request to Temporarily Seal a Feature. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.
	There will be no temporary sealing of naturally-occurring sensitive features on the site.
9.	Attachment F - Structural Practices . A description of the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site is attached. Placement of structural practices in floodplains has been avoided.
10.	Attachment G - Drainage Area Map . A drainage area map supporting the following requirements is attached:
	For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.
	For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.
	For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.
	There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.



- 18. Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.
- 19. Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

Administrative Information

- 20. All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.
- 21. If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.
- 22. Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

TCEQ FORM 0602 ATTACHMENT A – SPILL RESPONSE ACTIONS

The purpose of this section is to provide measures and steps to help reduce the discharge of pollutants to watercourses from accidental leaks and spills. This goal can be obtained by providing education on how to reduce the chance for spills, stopping the source of spills, containing and cleaning up the spills, properly disposing of spill materials, and training employees.

The contractor needs to ensure that all employees and sub-contractors on the job site are aware of the spill response measures in order to respond with the appropriate action for each individual type of spill. In addition to the following guidance, the contractor can reference the latest version of TCEQ's Technical Guidance Manual RG-348 Section 1.4.16.

The following steps will help reduce the stormwater impacts of leaks and spills:

Education

- Be aware that different materials pollute in different amounts. Make sure that
 each employee knows what a "significant spill" is for each material they use, and
 what is the appropriate response for "significant" and "insignificant" spills.
 Employees should also be aware of when spill must be reported to the TCEQ.
 Information available in 30 TAC 327.4 and 40 CFR 302.4.
- 2. Educate employees and subcontractors on potential dangers to humans and the environment from spills and leaks.
- 3. Hold regular meetings to discuss and reinforce appropriate disposal procedures (incorporate into regular safety meetings).
- 4. Establish a continuing education program to indoctrinate new employees.
- 5. Have contractor's superintendent or representative oversee and enforce proper spill prevention and control measures.

General Measures

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- 2. Store hazardous materials and wastes in covered containers and protect from vandalism.
- 3. Place a stockpile of spill cleanup materials where it will be readily accessible.
- 4. Train employees in spill prevention and cleanup.
- 5. Designate responsible individuals to oversee and enforce control measures.
- 6. Spills should be covered and protected from stormwater runon during rainfall to the extent that it doesn't compromise clean up activities.
- 7. Do not bury or wash spills with water.

- 8. Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance with applicable regulations.
- 10. Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- 11. Place Material Safety Data Sheets (MSDS), as well as proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- 12. Keep waste storage areas clean, well organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup

- 1. Clean up leaks and spills immediately.
- 2. Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be disposed of as hazardous waste.
- 3. Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly. See the waste management BMPs in this section for specific information.

Minor Spills

- (1) Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill.
- (2) Use absorbent materials on small spills rather than hosing down or burying the spill.
- (3) Absorbent materials should be promptly removed and disposed of properly.
- (4) Follow the practice below for a minor spill:
- (5) Contain the spread of the spill.
- (6) Recover spilled materials.
- (7) Clean the contaminated area and properly dispose of contaminated materials.

Semi-Significant Spills

Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately:

- 1. Contain spread of the spill.
- 2. Notify the project foreman immediately.

- 3. If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- 4. If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- 5. If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that are in reportable quantities:

- 1. Notify the TCEQ by telephone as soon as possible and within 24 hours at 512- 339-2929 (Austin) or 210-490-3096 (San Antonio) between 8 AM and 5 PM. After hours, contact the Environmental Release Hotline at 1-800-832-8224. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
- 2. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424-8802.
- 3. Notification should first be made by telephone and followed up with a written report.
- 4. The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- 5. Other agencies which may need to be consulted include, but are not limited to, the City Police Department, County Sheriff Office, Fire Departments, etc. More information on spill rules and appropriate responses is available on the TCEQ website at: http://www.tnrcc.state.tx.us/enforcement/emergency_response.html

Vehicle and Equipment Maintenance

- 1. If maintenance must occur onsite, use a designated area and a secondary containment, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- 2. Regularly inspect onsite vehicles and equipment for leaks and repair immediately
- 3. Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- 4. Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- 5. Place drip pans or absorbent materials under paving equipment when not in use.
- 6. Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- 7. Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.

- 8. Oil filters disposed of in trashcans or dumpsters can leak oil and pollute stormwater. Place the oil filter in a funnel over a waste oil-recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask the oil supplier or recycler about recycling oil filters.
- 9. Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- 1. If fueling must occur on site, use designated areas, located away from drainage courses, to prevent the runon of stormwater and the runoff of spills.
- 2. Discourage "topping off" of fuel tanks.
- 3. Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.

TCEQ FORM 0602 ATTACHMENT B – POTENTIAL SOURCES OF CONTAMINATION

A few of the potential sources of contamination that may occur during construction are:

1) Construction debris, trash, and litter from workers

Preventative Measure: Trash receptacles and/or dumpsters shall be located on site for disposal of waste. Contractor shall follow good housekeeping practices during construction, always cleaning up loose materials and trash as construction progresses.

2) Leaks from construction and other vehicles such as oil, grease, fuel, and hydraulic fluids

Preventative Measure: Vehicle maintenance, lubrication, and fueling shall be performed in a designated area within the construction staging areas that is monitored daily for contamination.

3) Tar, fertilizers, cleaning solvents, detergents, and petroleum based products.

Preventative Measure: The contractor shall be responsible for immediate cleanup should an unexpected rain occur that results in contamination from above listed products.

TCEQ FORM 0602 ATTACHMENT C – SEQUENCE OF MAJOR ACTIVITIES

The anticipated construction sequencing is as follows:

- 1) Install stabilized construction exit, silt fence, and tree protection per the Erosion Control Plan
- 2) Construct perimeter ditches to ensure sediment doesn't leave the site in accordance with the Erosion Control Plan and Grading Plan. Install Rock Check Dams as required as construction progresses.
- 3) Clear and grub the site
- 4) Complete rough grading of the site, including the batch detention pond berm, pavement subgrade, and building pad.
- 5) Install storm systems as necessary to promote positive drainage throughout construction. Install appropriate temporary BMP's as listed on the Erosion Control Plan as construction progresses. Install batch detention pond outlet and associated controls.
- 6) Install on-site utilities
- 7) Complete building pad and site paving.
- 8) Begin vertical construction
- 9) Revegetate disturbed areas
- 10) Install landscaping
- 11) Remove temporary erosion and sedimentation controls once the site is fully stabilized

TCEQ FORM 0602 ATTACHMENT D – TEMPORARY BEST MANAGEMENT PRACTICES AND MEASURES

Proposed temporary erosion control BMP's for this site include:

- 1) Silt Fence
- 2) Rock Check Dams
- 3) Stabilized Construction Entrance / Exit
- 4) Inlet Protection
- 5) Concrete Washout Area

The details for these BMP's, as well as the location and quantities of these BMP's can be seen on the Erosion Control Plan and Erosion Control Details located in the construction plan set in Appendix F of the Permanent Stormwater Control Section.

The purpose of the temporary stormwater BMP's is to minimize erosion and sediment discharge from the project site to receiving waters during construction. The contractor is responsible for the implementation of the Storm Water Pollution Prevention Plan (SWPPP) and is solely responsible for installation, implementation, maintenance, and effectiveness of all erosion control devices, and for updating the erosion control plan during construction as field conditions change. The erosion control devices shall remain in place until the area it protects has been permanently stabilized.

TCEQ FORM 0602 ATTACHMENT E – Request to Temporarily Seal a Feature

Not Applicable

TCEQ FORM 0602 ATTACHMENT F – Structural Practices

The following structural measures will be installed prior to site construction:

- 1. Silt Fence Silt fence will be installed along the downstream end of the property
- 2. Rock Check Dams Rock Check Dams will be installed in a similar manner to silt fence, although are used where storm water is channelized or a high flow-through rate is needed.
- 3. Stabilized Construction Entrance / Exit will be placed at the ingress/egress location into the site to prevent the tracking of sediment onto the road.
- 4. Construction Staging Area Contractor to locate a suitable location for their construction staging area for vehicle maintenance, fueling, lubrication, and storage of construction materials.
- 5. Concrete Washout Area- A concrete washout pit will be placed on site to provide containment and easier cleanup of waste from concrete operations.

TCEQ FORM 0602 ATTACHMENT G – DRAINAGE MAP

Temporary sediment basins are not required because there is less than 10 acres of land draining to a common drainage point. Silt fences, rock check dams, and other prior mentioned structural controls shall be used to limit pollutant discharges.

TCEQ FORM 0602 ATTACHMENT H – Temporary Sediment Pond(s) Plans and Calculations

Not Applicable

TCEQ FORM 0602 ATTACHMENT I – Inspection and Maintenance of BMPs

Contractors shall inspect all erosion control devices, BMPs, disturbed areas, and vehicle entry and exit areas weekly and within 24 hours of all rainfall events of 0.5 inches or greater, and keep a record of this inspection in the SWPPP booklet if applicable, to verify that the devices and erosion control plan are functioning properly. If a repair is necessary, it shall be performed before the next anticipated storm event but no later than seven calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from equipment. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.

Silt Fence Inspection and Maintenance:

- 1. Inspect all fencing weekly, and after any rainfall.
- 2. Remove sediment when buildup reaches 6 inches.
- 3. Replace any torn fabric or install a second line of fencing parallel to the torn section.
- 4. Replace or repair any sections crushed or collapsed in the course of construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a silt fence at common vehicle access points.
- 5. When construction is complete, the sediment should be disposed of in a manner that will not cause additional siltation and the prior location of the silt fence should be revegetated. The fence itself should be disposed of in an approved landfill.

Rock Check Dams Inspection and Maintenance:

- 1. Check dams should be inspected and checked for sediment accumulation after each runoff-producing storm event.
- 2. Sediment should be removed when it reaches one half of the original height of the measure.
- 3. Regular inspections should be made to ensure that the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam should be corrected immediately.

Construction Entrance/Exit Inspection and Maintenance:

- The entrance should be maintained in a condition, which will prevent tracking or flowing
 of sediment onto public rights-of-way. This may require periodic top dressing with
 additional stone as conditions demand and repair and/or cleanout of any measures used
 to trap sediment.
- 2. All sediment spilled, dropped, washed or tracked onto public rights-of-way should be removed immediately by contractor.
- 3. When necessary, wheels should be cleaned to remove sediment prior to entrance onto public right-of-way.

- 4. When washing is required, it should be done on an area stabilized with crushed stone that drains into an approved sediment trap or sediment basin.
- 5. All sediment should be prevented from entering any storm drain, ditch or water course by using approved methods.

Concrete Washout Inspection and Maintenance:

- 1. After the concrete in the washout sets up, it can be broken up and disposed of properly
- 2. Inspect plastic lining for tears, holes, or defects, and replace if necessary.

Inlet Protection Inspection and Maintenance:

- 1. Inspection should be made weekly and after each rainfall. Repair or replacement should be made promptly as needed by the contractor.
- 2. Remove sediment when buildup reaches a depth of 3 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
- 3. Check placement of device to prevent gaps between device and curb.
- 4. Inspect filter fabric and patch or replace if torn or missing.
- 5. Structures should be removed and the area stabilized only after the remaining drainage area has been properly stabilized.

TCEQ FORM 0602

Attachment J - Schedule of Interim and Permanent Soil Stabilization Practices

The schedule of interim and permanent soil stabilization practices shall be as follows:

- 1) Installation and utilization of stabilization measures will begin as soon as practicable in any portion of the site where construction activities have either temporarily or permanently ceased. Stabilization measures must be initiated immediately, where construction activities have temporarily ceased and will not resume for a period exceeding 14 calendar days. The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this requirement, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth- disturbing activities have temporarily or permanently ceased.
- 2) Temporary / Interim stabilization methods should be utilized in situations where development and/or construction practices have ceased temporarily, and permanent stabilization methods should be utilized after development and/or construction activities have been completed.
- 3) If an area is to be temporarily stabilized, that can be accomplished by spreading rapidly growing grasses by hydro-seeding or hydro-mulching. Other methods of temporary stabilization include the use of geo-textiles or mulching.
- 4) All sloped areas shall be hydromulched or sodded immediately after final grades have been established. Contractor shall be responsible for the establishment of adequate vegetation in disturbed areas. A minimum of 90% coverage of healthy vegetation will be required prior to completion of the project.
- 5) Permanent vegetation can be established through the use of sodding, hydro-mulching, or seeding. Seeding is very effective in controlling soil erosion once a vegetative cover of about 80% has been established. However, often seeding and fertilizing do not produce as thick a vegetative cover as do seed and mulch or netting. Newly established vegetation does not have as extensive a root system as existing vegetation and therefore is more prone to erosion, especially on steep slopes. Care should be taken when fertilizing to avoid untimely or excessive application. Since the practice of seeding and fertilizing does not provide any protection during the time of vegetative establishment, it should be used only on favorable soils in very flat areas and not in sensitive areas. Sodding, on the other hand, provides immediate stabilization of an area and should be used in critical areas or where establishment of permanent vegetation by seeding and mulching would be difficult. Sodding is also a preferred option when there is high erosion potential during the period of vegetative establishment from seeding.

Permanent Stormwater Section

Texas Commission on Environmental Quality

for Regulated Activities on the Edwards Aquifer Recharge Zone and Relating to 30 TAC §213.5(b)(4)(C), (D)(Ii), (E), and (5), Effective June 1, 1999

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

Signature

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **Permanent Stormwater Section** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Print Name of Customer/Agent: Landon Cole Allen, P.E. Date: 07-16-2024 Signature of Customer/Agent Cole alla. Regulated Entity Name: Hill Country Forensics Permanent Best Management Practices (BMPs) Permanent best management practices and measures that will be used during and after construction is completed. 1. Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction. N/A 2. These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director. The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs

and measures for this site.

	A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is:
	□ N/A
3.	Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.
	□ N/A
4.	Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
	 The site will be used for low density single-family residential development and has 20% or less impervious cover. The site will be used for low density single-family residential development but has
	more than 20% impervious cover. \square The site will not be used for low density single-family residential development.
5.	The executive director may waive the requirement for other permanent BMPs for multifamily residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.
	 Attachment A - 20% or Less Impervious Cover Waiver. The site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is attached. ☑ The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
6.	☐ The site will not be used for multi-family residential developments, schools, or small business sites. ☐ Attachment B - BMPs for Upgradient Stormwater.
	IALAGGUNGULD TOMES IVI QUEGUICIL SWIIIWALEI.

		 A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is attached. No surface water, groundwater or stormwater originates upgradient from the site and flows across the site, and an explanation is attached. Permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, and an explanation is attached.
7.	\boxtimes	Attachment C - BMPs for On-site Stormwater.
		 A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is attached. Permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, and an explanation is attached.
8.		Attachment D - BMPs for Surface Streams . A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is attached. Each feature identified in the Geologic Assessment as sensitive has been addressed.
	\boxtimes	N/A
9.		The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.
		 The permanent sealing of or diversion of flow from a naturally-occurring sensitive feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed. Attachment E - Request to Seal Features. A request to seal a naturally-occurring sensitive feature, that includes, for each feature, a justification as to why no reasonable and practicable alternative exists, is attached.
10.		Attachment F - Construction Plans . All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated. The plans are attached and, if applicable include:
		 ✓ Design calculations (TSS removal calculations) ✓ TCEQ construction notes ✓ All geologic features ✓ All proposed structural BMP(s) plans and specifications
		N/A

11. Attachment G - Inspection, Maintenance, Repair and Retrofit Plan. A plan for the inspection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and measures is attached. The plan includes all of the following:
 ☑ Prepared and certified by the engineer designing the permanent BMPs and measures ☑ Signed by the owner or responsible party ☑ Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit ☑ A discussion of record keeping procedures
□ N/A
12. Attachment H - Pilot-Scale Field Testing Plan. Pilot studies for BMPs that are not recognized by the Executive Director require prior approval from the TCEQ. A plan for pilot-scale field testing is attached.
⊠ N/A
13. Attachment I -Measures for Minimizing Surface Stream Contamination. A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is attached. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity, which increase erosion that results in water quality degradation.
⊠ N/A
Responsibility for Maintenance of Permanent BMP(s)
Responsibility for maintenance of best management practices and measures after construction is complete.
14. The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.
□ N/A
15. A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.
□ N/A

TCEQ FORM 0600 ATTACHMENT A – 20% OR LESS IMPERVIOUS COVER WAIVER

Not Applicable

TCEQ FORM 0600 ATTACHMENT B – BMPs FOR UPGRADIENT STORMWATER

Stormwater from a small portion of the ROW sheet flows through the site. However, since there is work within the ROW as part of the project (driveway, sidewalk, utilities), that portion of the ROW is considered a part of the project site and is not considered offsite stormwater. The stormwater from the ROW enters the site and is conveyed to the batch detention pond system. The batch detention pond system is discussed in Attachment C.

TCEQ FORM 0600 ATTACHMENT C – BMPs FOR ON-SITE STORMWATER

A batch detention pond system will be constructed to prevent pollution of surface water that originates on-site or flows off site. The batch detention pond is designed in accordance with TCEQ RG-348 Addendum Section 3.2.17. A batch detention system removes sediment from stormwater in a manner similar to an extended detention basin, in that it captures stormwater, allows particulates to settle out, and then after a set amount of time (12 hours), a valve is opened that allows stormwater to leave the pond. In this particular case, the batch detention pond controller/outlet system is a SmartPond Valve system, which is a product produced by Construction Eco Services that contains a perforated riser with trash rack for an outlet, a controller, actuator, valve, and solar power source to provide a complete batch detention pond outlet solution. The riser/trash rack also has a sediment measure marker built into it. The system also provides real time data for the owner concerning water level, valve position, temperature, maintenance alerts, etc. The batch detention system has a TSS removal percentage of 91%. See the TSS Removal Calculations for further information.

TCEQ FORM 0600 ATTACHMENT D – BMPs FOR SURFACE STREAMS

Not applicable

TCEQ FORM 0600 ATTACHMENT E – REQUEST TO SEAL A FEATURE

Not applicable

TCEQ FORM 0600 ATTACHMENT F – CONSTRUCTION PLANS

OWNER

DR. SATISH CHUNDRU
HILL COUNTRY FORENSICS LLC
PHONE: (305) 239-5755

ARCHITECT

JEREMY KOOMLER
FRAMEWORK ARCHITECTS
PHONE: (512) 765-2599

EMAIL: JEREMY@FRAMEWORKS.COM

MEE

RICHARD SNIFF, P.E.

POWER FORWARD

PHONE: (512) 956-2971

EMAIL: RICHARD@POWERFORWARDENG.COM

CIVII

COLE ALLEN, P.E.
AKRON CONSULTING LLC
PHONE: (903) 452-0637
EMAIL: COLEA@AKRON-CONSULTING.COM

LEGAL DESCRIPTION:

LOT 5 OF THE RESOURCE COMMERCIAL PARK, A SUBDIVISION IN WILLIAMSON COUNTY, TEXAS, ACCORDING TO THE MAP OR PLAT THEREOF RECORDED IN CABINET O, SLIDE 174 OF THE PLAT RECORDS OF WILLIAMSON COUNTY, TEXAS.

FLOODPLAIN INFORMATION:

NO PORTION OF THIS TRACT IS WITHIN THE LIMITS OF THE 100-YEAR FLOODPLAIN AS DEPICTED ON THE FEMA FLOOD INSURANCE RATE MAP PANEL NO. 48491CO285F, DATED DECEMBER 20, 2019 FOR WILLIAMSON COUNTY, TEXAS.

EDWARDS AQUIFER NOTE:

THE PROJECT IS LOCATED WITHIN THE EDWARDS AQUIFER RECHARGE ZONE

PROPOSED USE: OFFICE

ACREAGE: 2.788 AC

TOTAL IMPERVIOUS COVER:

EXISTING: 0.1 ACRES (0%)
PROPOSED: 0.88 ACRES (32%)

FIRE DEPARTMENT:

GEORGETOWN FIRE DEPARTMENT 3500 DB WOOD RD. GEORGETOWN, TEXAS 78628 (512) 930-3473

ELECTRICITY, WATER & WASTEWATER:

GEORGETOWN UTILITY SYSTEMS 300-1 INDUSTRIAL AVENUE GEORGETOWN, TX 78626 (512) 930-3555

BENCH MARK LIST

BM# 1 PK NAIL SET IN EDGE OF THE NORTH SIDE OF MARKET STREET IN LINE WITH THE WESTERN PROPERTY BOUNDARY OF THE SITE. N=10,225,822.20
E=3,139,939.93
ELEV=689.56

BM# 2 PK NAIL SET IN EDGE OF THE NORTH SIDE OF MARKET STREET IN LINE WITH THE EASTERN PROPERTY BOUNDARY OF THE SITE.
N=10,225,670.16
E=3,140,218.82

LANDON COLE ALLEN

PREPARED BY:

ELEV=687.44

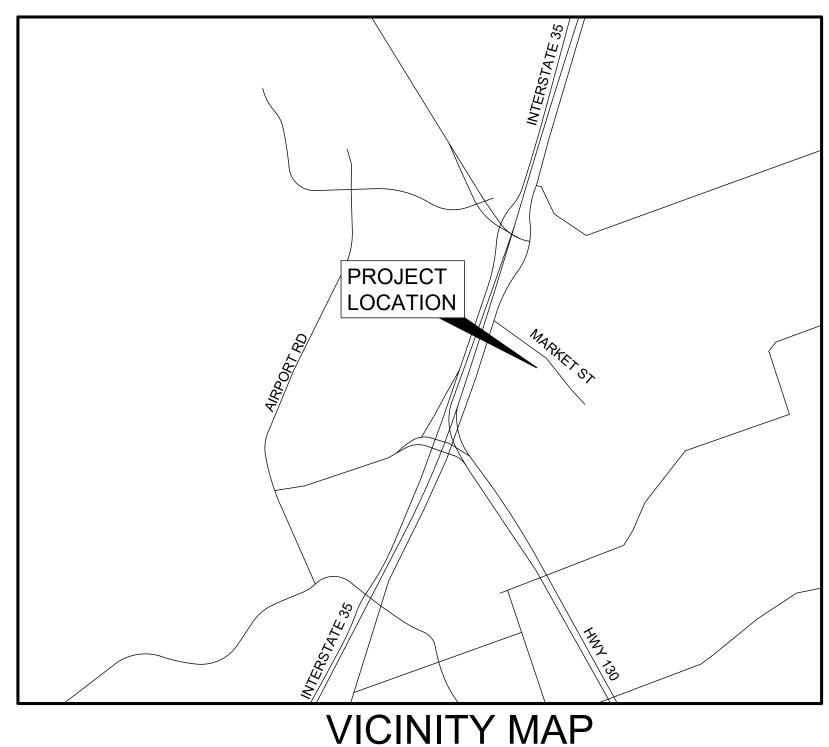


AKRON CONSULTING, LLC.
431 N. CENTER ST.
LONGVIEW, TX 75601
TBPE Firm Reg. # 14014
903-720-7822
www.akron-consulting.com

CIVIL PLANS FOR FORSIC SPACES

136 MARKET ST GEORGETOWN, TX 78626

2024-XX-SWP



SCALE: 1" = 1 MI

CITY OF GEORGETOWN NOTES:

- THESE PLANS WERE PREPARED, SEALED, SIGNED AND DATED BY A TEXAS LICENSED PROFESSIONAL ENGINEER. THEREFORE, BASED ON THE ENGINEER'S CONCURRENCE OF COMPLIANCE, THE PLANS FOR CONSTRUCTION OF THE PROPOSED PROJECT ARE HEREBY APPROVED SUBJECT TO THE STANDARD CONSTRUCTION SPECIFICATIONS AND DETAILS MANUAL AND ALL OTHER APPLICABLE CITY, STATE AND FEDERAL REQUIREMENTS AND CODES.
- 2. THIS PROJECT IS SUBJECT TO ALL CITY STANDARD SPECIFICATIONS AND DETAILS IN EFFECT AT THE TIME OF SUBMITTAL OF THE PROJECT TO THE CITY.
- THIS PROJECT IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN.

 WHERE NO EXISTING OVERHEAD INFRASTRUCTURE EXISTS, UNDERGROUND ELECTRIC UTILITY LINES SHALL BE LOCATED ALONG THE STREET AND WITHIN THE SITE. WHERE EXISTING OVERHEAD
- INFRASTRUCTURE IS TO BE RELOCATED, IT SHALL BE REINSTALLED UNDERGROUND AND THE EXISTING FACILITIES SHALL BE REMOVED AT THE DISCRETION OF THE DEVELOPMENT ENGINEER.

 ALL ELECTRIC AND COMMUNICATION INFRASTRUCTURE SHALL COMPLY WITH UDC SECTION 13.06.

EDWARDS AQUIFER NOTES:

- 1. THE PROPERTY SUBJECT TO THIS APPLICATION IS SUBJECT TO THE WATER QUALITY REGULATIONS OF THE CITY OF GEORGETOWN.
- 2. A GEOLOGIC ASSESSMENT, IN ACCORDANCE WITH THE CITY OF GEORGETOWN WATER QUALITY REGULATIONS, WAS COMPLETED ON APRIL 19, 2024. ANY SPRINGS AND STREAMS AS IDENTIFIED IN THE GEOLOGIC ASSESSMENT ARE SHOWN HEREIN.

JULY 2024

	SHEETS					
Sheet Number	Sheet Title					
C0.0	COVER					
C0.1	EXISTING SURVEY					
C1.0	DEMOLITION PLAN					
C2.0	SITE PLAN					
C2.1	DIMENSIONAL CONTROL PLAN					
C2.2	PAVING PLAN					
C2.3	SITE DETAILS					
C3.0	GRADING PLAN					
C3.1	STORM SEWER PLAN					
C3.2	STORM SEWER PROFILES					
C3.2	STORM SEWER CALCS					
C3.3	STORM SEWER DETAILS					
C4.0	EXISTING DRAINAGE AREA MAP					
C4.1	PROPOSED DRAINAGE AREA PLAN					
C4.2	PROPOSED DRAINAGE AREA PLAN FOR STRUCTURES					
C5.0	DETENTION AND WATER QUALITY POND PLAN					
C5.1	DETENTION AND WATER QUALITY POND SECTIONS					
C5.2	WATER QUALITY CALCULATIONS					
C5.3	WATER QUALITY DETAILS					
C5.4	WATER QUALITY DETAILS					
C5.5	WATER QUALITY DETAILS					
C6.0	UTILITY PLAN					
C6.1	WATER DETAILS					
C6.2	WATER DETAILS					
C6.3	WASTEWATER DETAILS					
C7.0	EROSION CONTROL PLAN					
C7.1	EROSION CONTROL DETAILS					
C8.0	LANDSCAPE PLAN					

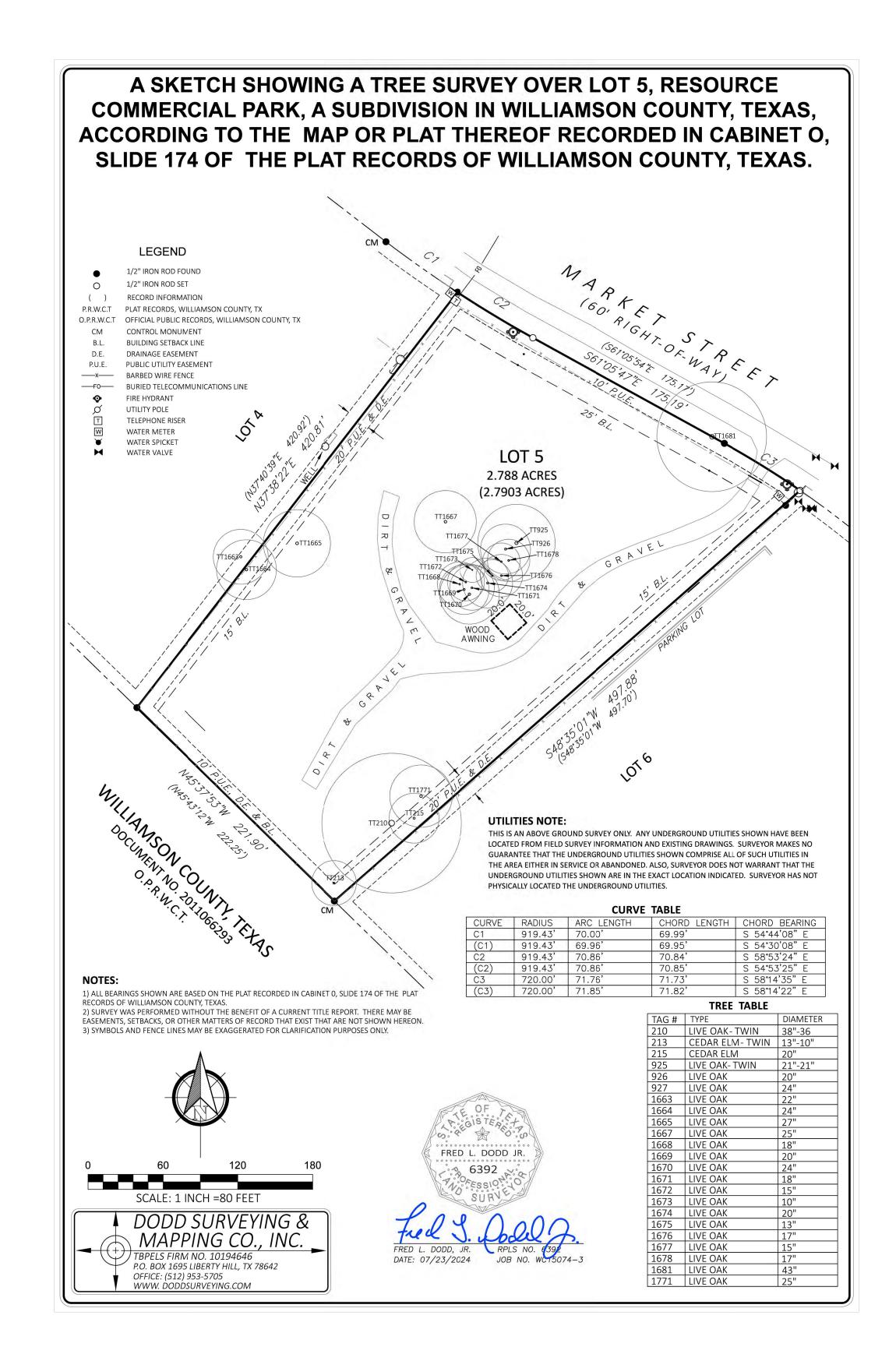
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REVISIONS/CORRECTIONS

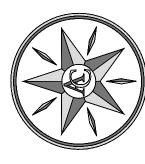
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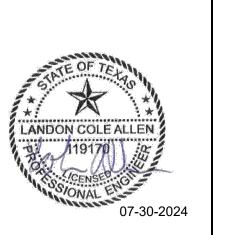
ADDRESS: MARKET STREET

ORIGINAL SURVEY (2015) FOR REFERENCE ONLY



UPDATED TREE SURVEY (2024) FOR REFERENCE ONLY AKRON CONSULTING, LLC. 431 N. CENTER ST. LONGVIEW, TX 75601 TBPE Firm Reg. # 14014 (O) 903-720-4822





STREET | GEORGETOWN, TX

SP

ORENSIC

TE NO. REVISION A

DRAWN BY:

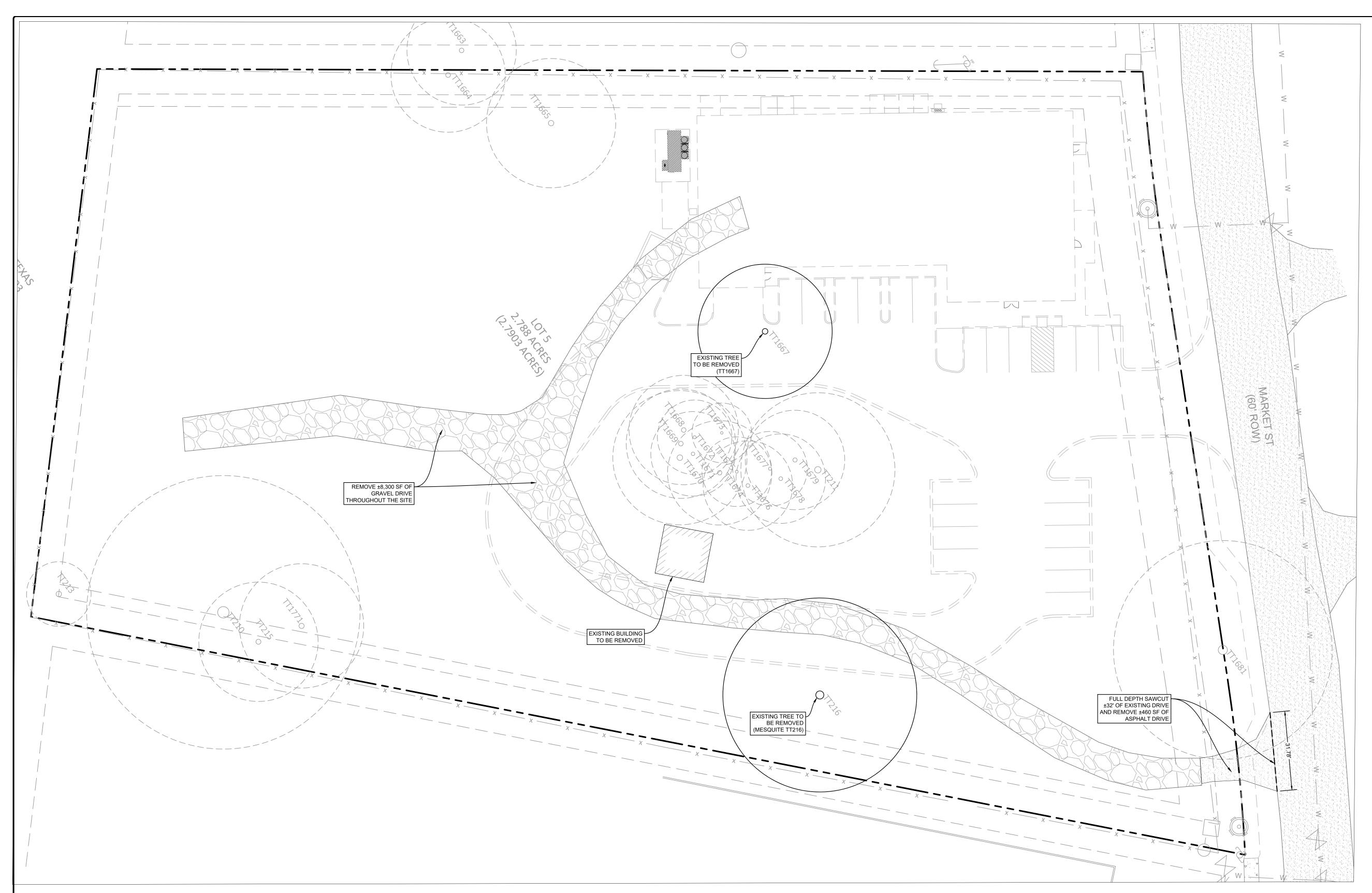
APPROVED BY:

DATE: 7/30/2024

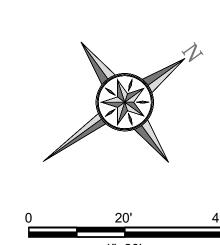
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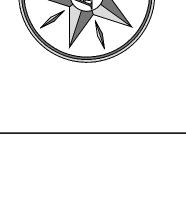
JOB NO:

C0.1









REVISION

DRAWN BY: APPROVED BY: DATE: 7/30/2024 DWG NAME: C1.0 DEMO PLAN.DWG

JOB NO:

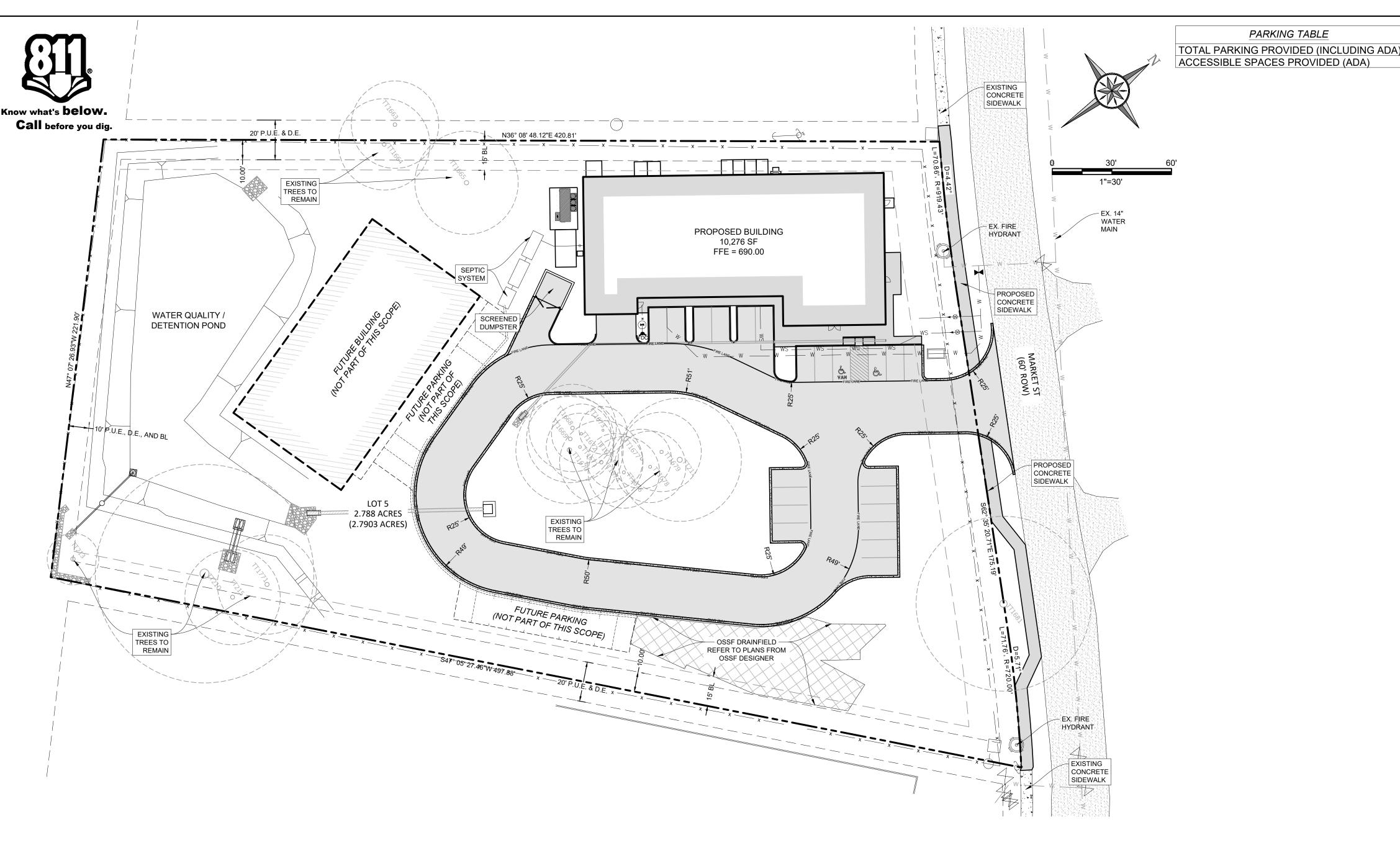
DEMOLITION NOTES

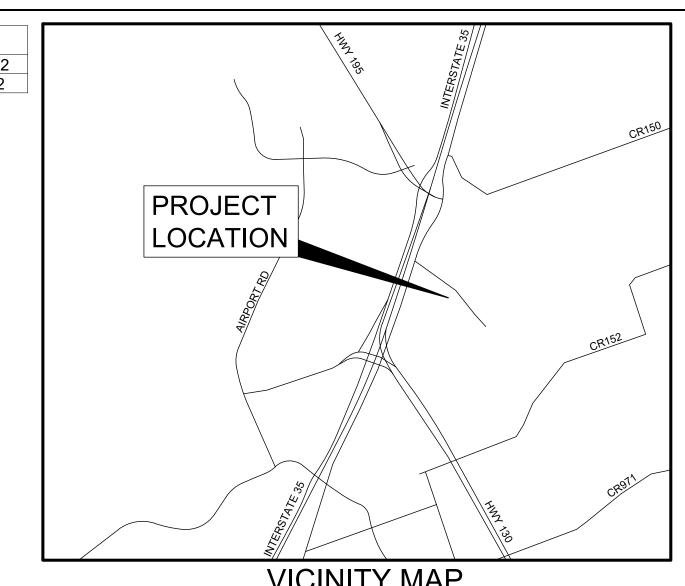
- PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED. PER TXR150,000 A SWPPP MUST BE PREPARED AND IMPLEMENTED PRIOR TO CONSTRUCTION. A SITE NOTICE MUST ALSO BE POSTED, AND A COPY OF THE SITE NOTICE MUST BE SUBMITTED TO THE MS4 OPERATOR. EROSION AND SEDIMENT CONTROL MEASUREMENTS SHALL BE
- MAINTAINED AT ALL TIMES DURING DEMOLITION. ALL EXISTING SERVICE UTILITIES WITHIN THE DEMOLITION BOUNDARY TO REMAIN, UNLESS OTHERWISE NOTED.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSING IN A LOCATION APPROVED BY THE OWNER AND ALL GOVERNING AUTHORITIES, OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, FENCES, TREES, BUSHES, SHRUBS, ETC., LOCATED WITHIN THE "PROJECT DEMOLITION AREA BOUNDARY" SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED (UNLESS OTHERWISE NOTED). ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE
- WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
- CONTRACTOR SHALL CONFORM WITH ALL APPLICABLE CODES (LOCAL, STATE & FEDERAL) FOR DEMOLITION OF STRUCTURES, DUST CONTROL, SOIL EROSION CONTROL AND DISPOSAL OF DEMOLITION MATERIAL, DEBRIS, ETC.
- CONTRACTOR SHALL EMPLOY A CERTIFIED LICENSED EXTERMINATOR TO TREAT THE BUILDING(S) AND TO CONTROL RODENTS AND VERMIN BEFORE AND DURING DEMOLITION OPERATIONS, IF APPLICABLE. CONTRACTOR SHALL NOT REMOVE OR MODIFY ANY FRANCHISE OR MUNICIPAL UTILITIES WITHOUT PERMISSION OF THEIR RESPECTIVE OWNERS. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING
- TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES. THE PURPOSE OF THIS DRAWING IS TO CONVEY THE OVERALL SCOPE OF WORK AND IT IS NOT INTENDED TO COVER ALL DETAILS OR SPECIFICATIONS REQUIRED TO COMPLY WITH GENERALLY ACCEPTED DEMOLITION PRACTICES. NOTES SHOWN HEREON REGARDING SPECIFIC ITEMS OF DEMOLITION ARE GENERAL IN NATURE, AND ARE NOT INTENDED TO BE WHOLLY INCLUSIVE. THE CONTRACTOR SHALL DEMOLISH AND REMOVE ALL EXISTING IMPROVEMENTS TO THE EXTENT AS NOTED IN THE PLANS AND SPECIFICATIONS, TO SATISFACTION OF THE OWNER.

PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID

THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ONSITE LOCATIONS OF EXISTING UTILITIES.

- 10. ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE PRESSURE GROUTED IF UNDER BUILDING.
- 11. CONTRACTOR SHALL DEMOLISH & REMOVE EXISTING SITE IMPROVEMENTS TO THEIR FULL DEPTH, AND FILL AS RECOMMENDED IN THE SOILS REPORT. SITE IMPROVEMENTS INCLUDE BUT ARE NOT LIMITED TO: SPREAD FOOTINGS, SLABS, PAVEMENTS, UNDERGROUND UTILITIES, SIDEWALKS, CURBS, GUTTERS, BOLLARDS, SIGNS, FENCES & MISCELLANEOUS LANDSCAPE ITEMS.
- 12. CONTRACTOR SHALL COMPLY WITH CHAPTER 14 OF THE INTERNATIONAL FIRE CODE DURING THE DEMOLITION PROCESS. 13. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND
- CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. 14. UNLESS SPECIFICALLY NOTED OTHERWISE, NO MATERIAL SCHEDULED FOR DEMOLITION SHALL BE REUSED IN NEW CONSTRUCTION.
- 15. EXISTING FOUNDATIONS, SLABS, PAVEMENTS AND BELOW GRADE STRUCTURES SHALL BE REMOVED FROM THE BUILDING AREA (ANY CONCRETE PIERS SHALL BE REMOVED DOWN TO A MINIMUM OF 4 FEET BELOW THE PROPOSED FINISHED CONCRETE ELEVATIONS).
- 16. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES AND APPROVED BY PROJECT OWNER & ENGINEER.
- 17. SHOULD REMOVAL AND/OR RELOCATION ACTIVITIES DAMAGE FENCING, LIGHTING AND/OR STORM INLET STRUCTURES, ETC., THEN THE CONTRACTOR SHALL PROVIDE NEW MATERIALS/ STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. EXCEPT FOR MATERIALS DESIGNED TO BE RELOCATED ON THIS PLAN, ALL OTHER CONSTRUCTION MATERIALS SHALL BE NEW.
- 18. DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE. 19. GRASS AREAS SHALL BE CLEARED AND GRUBBED AS NECESSARY TO COMPLETE CONSTRUCTION ACTIVITIES.
- 20. DEMOLITION SHALL BE DONE IN CONJUNCTION WITH THE GEOTECHNICAL INVESTIGATION.
- 21. CONTRACTOR SHALL REMOVE PAVEMENT AS SHOWN WITHIN SUBJECT PROPERTY BOUNDARY. 22. THE DEMOLITION CONTRACTOR IS SOLELY RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, OR PROCEDURES USED TO COMPLETE THE WORK IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND IS LIABLE FOR THE SAFETY OF THE PUBLIC OR CONTRACTOR'S EMPLOYEES DURING THE COURSE OF THE PROJECT.





VICINITY MAP

NOT TO SCALE

GENERAL NOTES

PARKING TABLE

1. PRIOR TO STARTING CONSTRUCTION, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT ALL NECESSARY PERMITS AND APPROVALS HAVE BEEN OBTAINED (INCLUDING SWPPP). NO CONSTRUCTION SHALL BEGIN UNTIL ALL PERMITS HAVE BEEN RECEIVED. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODE SHALL BE PERFORMED PRIOR TO SUBSTANTIAL PROJECT COMPLETION. 2. IF THE CONTRACTOR, IN THE COURSE OF THE WORK, FINDS ANY DISCREPANCIES BETWEEN THE PLANS AND

- THE PHYSICAL CONDITIONS OF THE LOCALITY, OR ANY ERRORS OR OMISSIONS IN THE PLANS OR IN THE LAYOUT AS GIVEN BY THE ENGINEER, IT SHALL BE HIS DUTY TO IMMEDIATELY INFORM THE ENGINEER, IN WRITING, AND THE ENGINEER WILL PROMPTLY VERIFY THE SAME. ANY WORK DONE AFTER SUCH DISCOVERY, UNTIL AUTHORIZED, WILL BE AT THE CONTRACTOR'S RISK.
- 3. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING ALL EXISTING DAMAGE AND NOTIFY OWNER AND/OR ENGINEER PRIOR TO STARTING CONSTRUCTION. 4. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REPAIRING ANY ITEMS DAMAGED DURING CONSTRUCTION,
- SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. DAMAGES SHALL BE REPORTED TO ENGINEER OF RECORD PRIOR TO REPAIR. 5. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS, AND DIMENSIONS SHOWN HEREON BEFORE BEGINNING CONSTRUCTION.
- 6. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THESE CONSTRUCTION DOCUMENTS, ANY DOCUMENTS REFERENCED, AND THE LATEST CONSTRUCTION SPECIFICATIONS AND DETAILS FROM THE STATE OR AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO ANY MODIFICATIONS.
- 7. THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCHMARKS, REFERENCE POINTS, STAKES, AND PROPERTY CORNERS. ANY DAMAGE TO SURVEY MARKERS BY THE CONTRACTOR SHALL BE REPLACED BY AN RPLS AT THE
- 8. CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER TO PREVENT INJURY TO WORKMEN AND THE PUBLIC AND TO PREVENT DAMAGE ON ADJOINING PROPERTY. ANY DAMAGE TO SUBJECT OR ADJOINING PROPERTY DURING CONSTRUCTION SHALL BE REPAIRED TO THE PRE-CONSTRUCTION CONDITIONS, OR BETTER, AT THE EXPENSE OF THE CONTRACTOR.
- 9. CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO ANY EXISTING ITEM AND/OR MATERIAL INSIDE OR OUTSIDE CONTRACT LIMITS DUE TO THE CONSTRUCTION OPERATION.
- 10. CONTRACTOR SHALL CONTACT DIGTESS (811) PRIOR TO ANY CONSTRUCTION ACTIVITIES. 11. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES.
- 12. CONTRACTOR TO VERIFY RELATIVE ELEVATIONS OF BENCHMARKS SHOWN ARE WITHIN 0.1FT OF ELEVATION SHOWN. IF THE CONTRACTOR RELOCATES OR SETS ANY ADDITIONAL BENCHMARKS, THEY SHALL BE ESTABLISHED WITH A HORIZONTAL AND VERTICAL TOLERANCE OF 0.1FT.
- DIMENSIONS SHOWN ARE FROM FACE OF CURB TO FACE OF CURB, UNLESS OTHERWISE NOTED.
- 14. STRIPING DIMENSIONS ARE SHOWN CENTER TO CENTER, UNLESS OTHERWISE NOTED.
- 15. ALL WALLS AND PROPER BACKFILL TO BE DESIGNED BY OTHERS. 16. THIS PLAN DOES NOT CERTIFY THE STRUCTURAL INTEGRITY OF ANY WALL OR ASSOCIATED CONSTRUCTION.
- 17. IF THE ELEVATIONS SHOWN CONFLICT WITH THE STRUCTURAL DESIGN, CONTACT THE ENGINEER IMMEDIATELY. 18. BARRICADING, TRAFFIC CONTROL, AND PROJECT SIGNS SHALL CONFORM TO TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS AND THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC
- CONTROL DEVICES. 19. CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR TRENCH SAFETY.
- 20. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF BUILDING FOOTPRINT, LOCATION AND SIZE OF DOWNSPOUTS, AND ANY OTHER APPURTENANCES CONNECTED TO THE 21. REFER TO ARCHITECTURAL PLANS FOR ADA STRIPING AND SIGNAGE SPECIFICATIONS. ALL HANDICAP
- ACCESSIBLE SITE FEATURES SHALL BE CONSTRUCTED TO MEET ALL CODES AND COMPLY WITH THE LATEST REVISION OF THE ADA REGULATIONS, AND THE TEXAS ACCESSIBILITY STANDARDS. 22. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND FINAL GEOTECH REPORT FOR BUILDING
- SUBGRADE PREPARATION REQUIREMENTS. 23. CONTRACTOR SHALL ADJUST EXISTING VALVES, MANHOLE RIMS, ETC. AS NECESSARY TO MATCH FINISHED
- 24. ALL DISTURBED GRASS AREAS SHALL BE REPLACED.
- 25. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROPER DRAINAGE THROUGHOUT THE SITE DURING CONSTRUCTION. CARE SHALL BE TAKEN TO PREVENT ANY NEGATIVE IMPACTS TO ADJACENT PROPERTIES.
- 26. CONTRACTOR SHALL CAREFULLY MONITOR WEATHER PATTERNS AND PREPARE FOR EXPECTED EVENTS. SPECIAL CARE SHALL BE TAKEN TO EXAMINE SITE PRIOR TO WEEKENDS OR ABSENCES FORM THE WORKSITE.
- 27. NO HAZARDOUS MATERIALS WERE IDENTIFIED DURING PRELIMINARY SITE INVESTIGATIONS. ANY ITEMS FOUND SUSPECT DURING CONSTRUCTION SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

UNDERGROUND UTILITIES WARNING

- 1. THERE MAY BE NUMEROUS UNDERGROUND UTILITIES IN THE LINE OF WORK, SUCH AS WATER, SEWER, GAS, PIPELINE, TELEPHONE AND ELECTRIC, SOME MAY BE ABANDONED WHILE MANY ARE ACTIVE. EXISTING UTILITIES SHOWN ON THE PLANS REPRESENT A DILIGENT EFFORT TO SHOW THEIR APPROXIMATE LOCATION. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE.
- 2. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN CONDUCTING EXCAVATION OPERATIONS. DAMAGES SHALL BE REPAIRED IMMEDIATELY AT CONTRACTOR'S EXPENSE. 3. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY
- EXCAVATION TO REQUEST FIELD LOCATION OF UTILITIES.

FRANCHISE UTILITY NOTES

- 1. REFER TO ARCHITECTURAL/MEP BUILDING PLANS FOR SITE LIGHTING ELECTRICAL PLAN. 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF THE PRIMARY
- ELECTRIC LINES TO BE INSTALLED BY ELECTRIC COMPANY. 3. THE ELECTRIC COMPANY/MEP WILL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL PRIMARY
- LINES AND TRANSFORMER. 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE TELEPHONE CONDUIT WITH PULL STRING. ALL BENDS SHALL BE LONG RADIUS SWEEPING BENDS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING
- ALL TELEPHONE INSTALLATION WITH THE TELEPHONE COMPANY. 5. TELEPHONE COMPANY WILL INSTALL THE UNDERGROUND TELEPHONE CABLE FROM THE END OF THE CONTRACTOR INSTALLED CONDUITS AT THE BUILDING TO THE CONNECTION AT THE POLE AND/OR EXISTING
- 6. CONTRACTOR SHALL INSTALL GALVANIZED PULL WIRE OR PURPLE PROPYLPOLYETHYLENE ROPE WITH A MINIMUM PULLING TENSION OF 100 POUNDS IN ALL CONDUIT.

REVISION

LANDON COLE ALLEN

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07-30-2024

DRAWN BY: APPROVED BY: DATE: 7/30/2024 DWG NAME: C2.0 SITE PLAN.DWG JOB NO:

TEXAS ACCESSIBILITY STANDARDS **CHAPTER 68 ADMINISTRATIVE RULES** FACILITY OWNER HAS THE DISCRETION TO DETERMINE PAINT COLOR, CONTRAST, FONT TYPES, INTERNATIONAL (1) the International Symbol of Accessibility painted SYMBOL OF ACCESSIBILITY TYPE, COLOR AND SIZE. 12" MIN. CHARACTER HEIGHT -AND 2" MIN. STROKE WIDTH (C) centered within each access aisle adjacent (3) a sign identifying the consequences of parking SYMBOL IS REQUIRED THE WORDS "NO PARKING" -

illegally in a paved accessible parking space. The sign must: (A) at a minimum state "Violators Subject to Fine and Towing" in a letter height of at least one inch; (B) be mounted on a pole, post, wall or

freestanding board; (C) be no more than eight inches below a sign required by Texas Accessibility Standards, 502.6; and

(D) be installed so that the bottom edge of the sign is no lower than 48 inches and no higher than 80 inches above ground level. (b) A parking space identification sign that complies with Texas Accessibility Standards, 502.6, that includes the requirements in subsection (a)(3)(A) satisfies subsection (a)(3).

68.104. Accessible Parking Spaces

contrasts the pavement;

words must be painted:

inches; and

(A) in all capital letters;

to the parking space; and

(a) A paved accessible parking space must include:

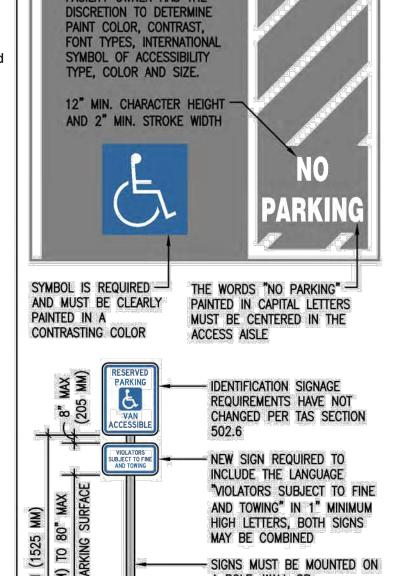
conspicuously on the surface in a color that

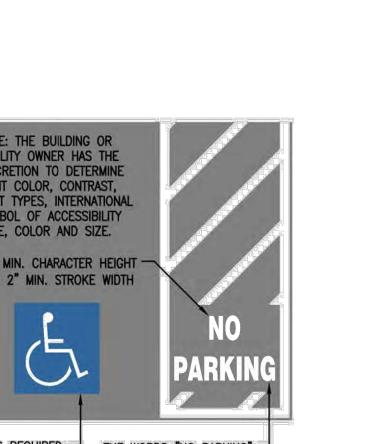
(2) the words "NO PARKING" painted on any

access aisle adjacent to the parking space. The

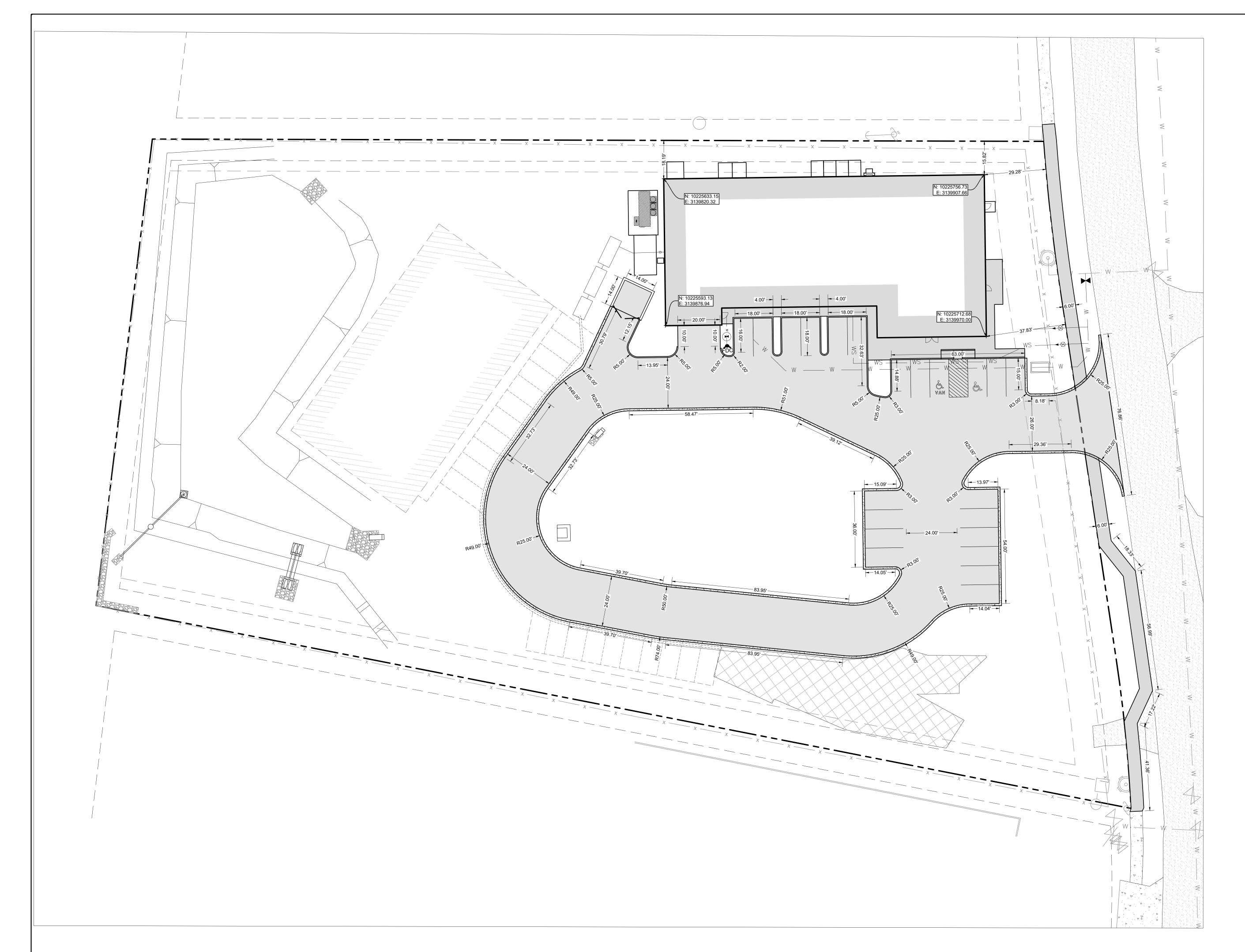
(B) with a letter height of at least twelve

inches, and a stroke width of at least two

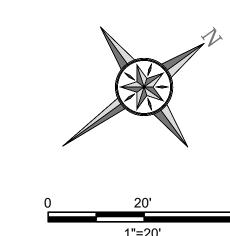


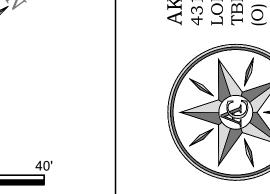


A POLE, WALL OR FREESTANDING BOARD











FORENSIC SPACES
MARKET STREET | GEORGETOWN, TX

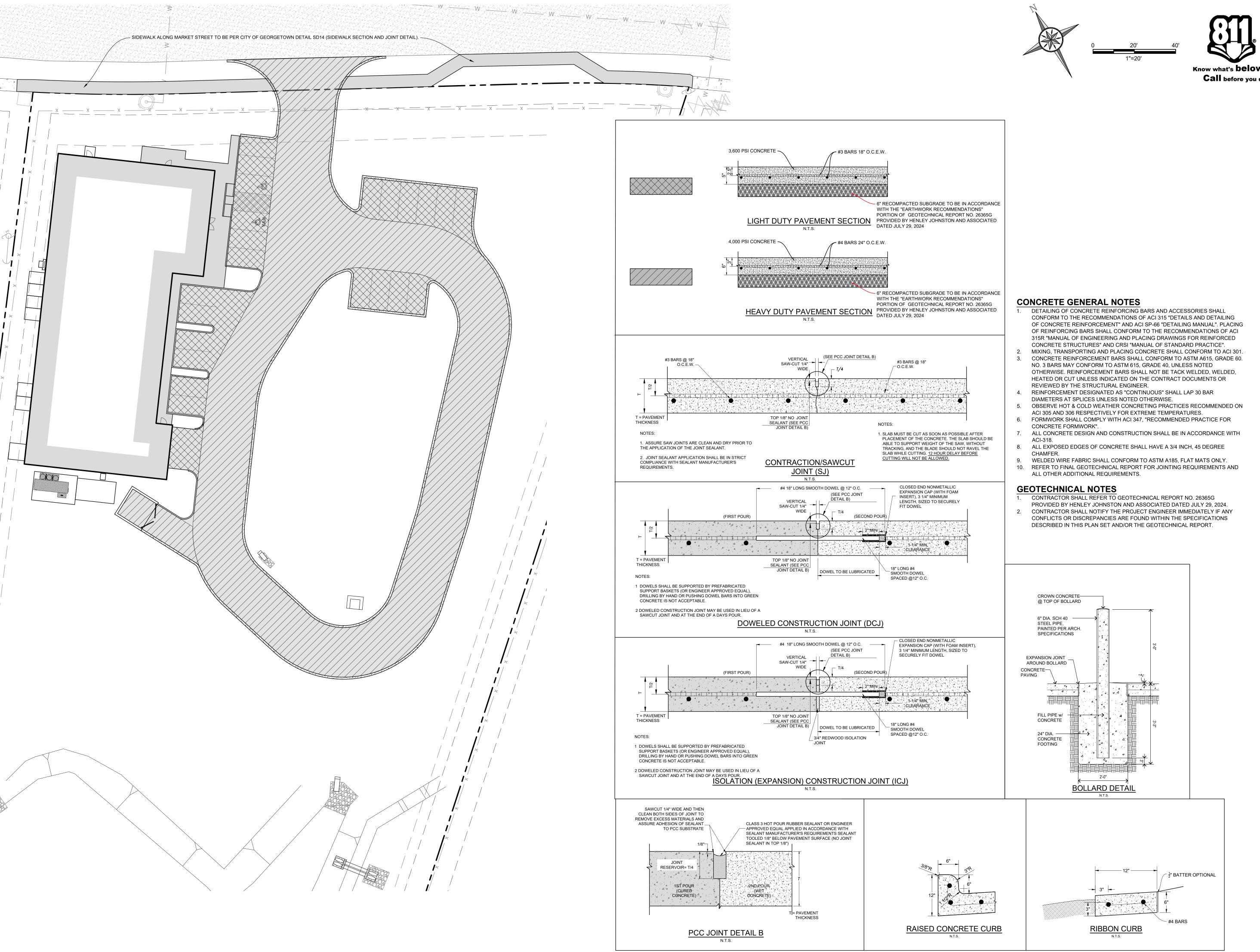
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DIMENSIONAL CONTROL PLAN

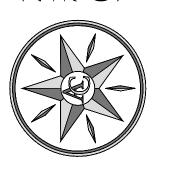
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APPROVED BY: DATE: 7/30/2024 DWG NAME: C2.1 DIMENSIONAL CONTROL PLAN.DWG

JOB NO:



Know what's **below.** Call before you dig.





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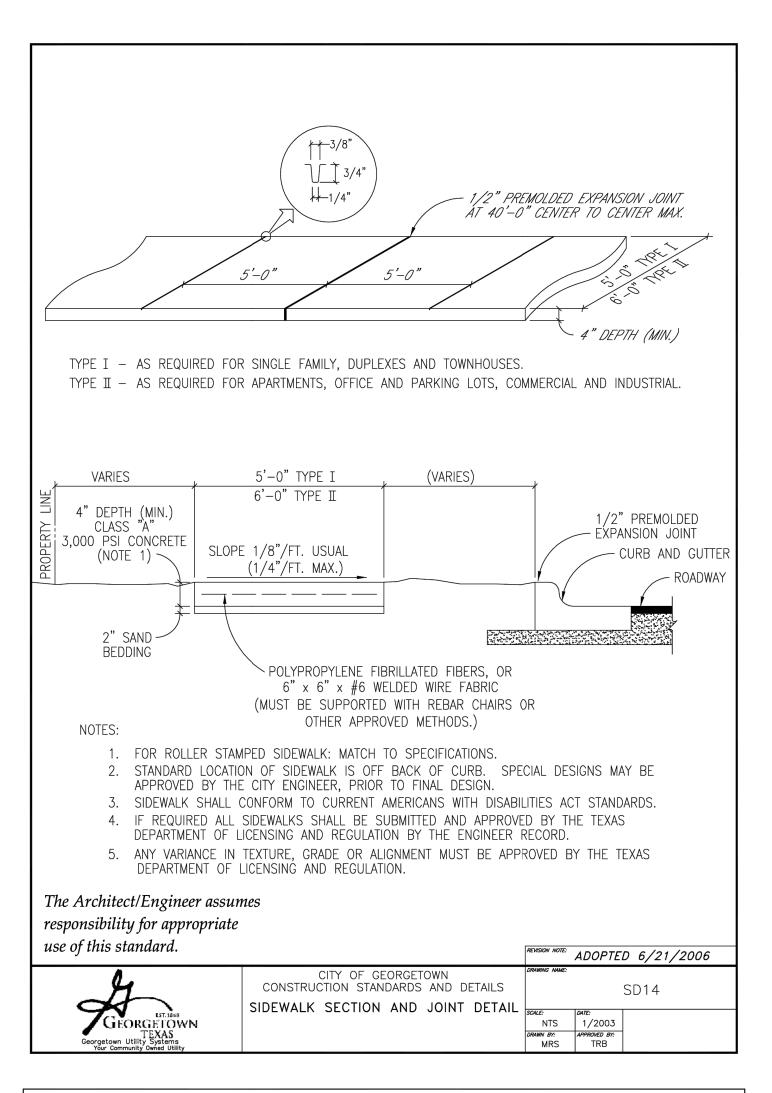
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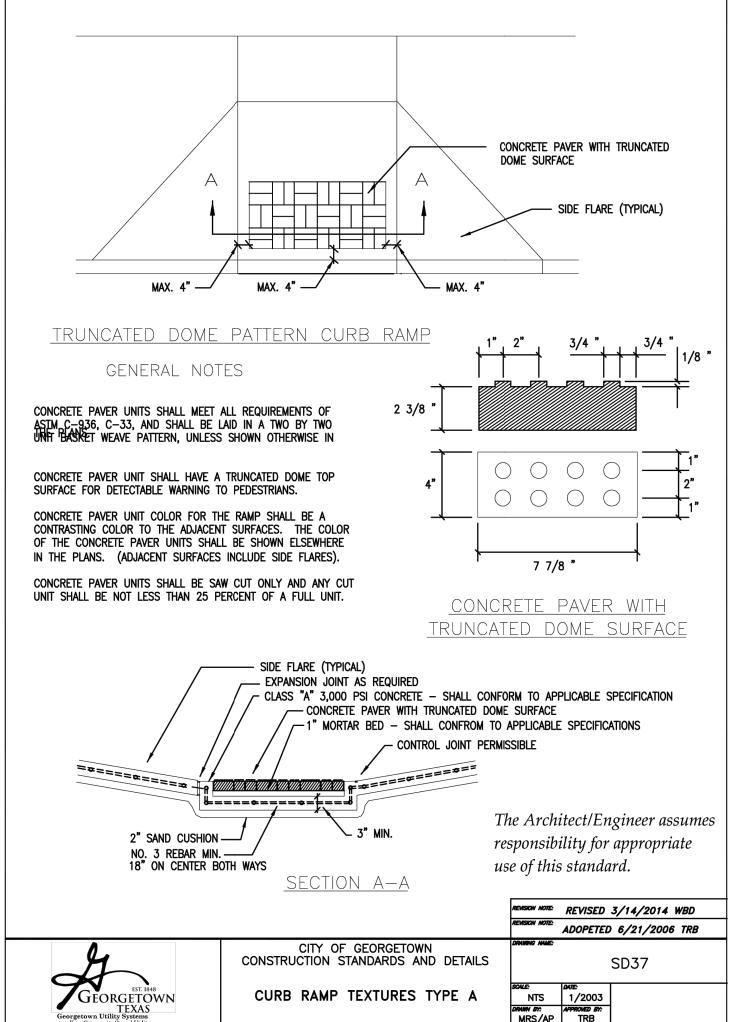
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DRAWN BY: APPROVED BY: DATE: DWG NAME:

JOB NO:



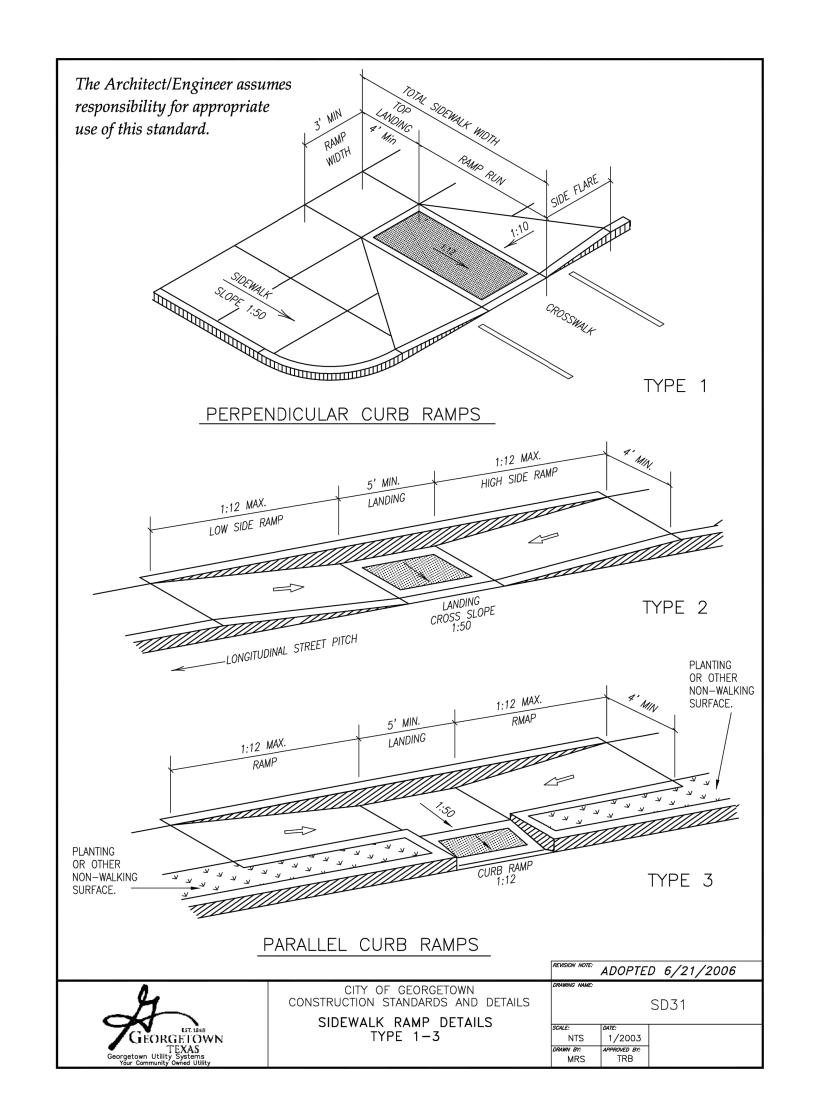


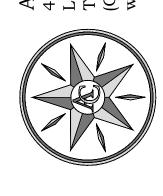
The Architect/Engineer assumes responsibility for appropriate use of this standard.

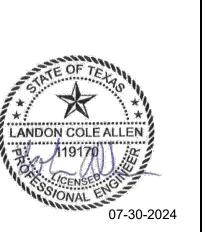
NOTES:

- 1. COMMERCIAL SIDEWALKS WIDTHS 6' RESIDENTIAL SIDEWALKS WIDTHS - 5'
- 2. <u>ALL SLOPES ARE MAXIMUM ALLOWABLE</u>. FLATTER SLOPES THAT WILL STILL DRAIN PROPERLY ARE ENCOURAGED.
- 3. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
- 4. FOR PURPOSES OF WARNING, THE CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT
- OF ADJOINING PEDESTRIAN ROUTES. 5. TEXTURES MAY CONSIST OF PAVERS WITH TRUNCATED DOMED SURFACES OR GROOVES. TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
- 6. COLOR CONTRAST, FOR EXAMPLE, CAN BE ACCOMPLISHED WITH COLORED CONCRETE PAVERS THAT HAVE TRUNCATED DOMES OR BY COLORED STAINED CONCRETE WITH GROOVES, EITHER OF WHICH WOULD PROVIDE A CONTRAST WITH TYPICALLY LIGHT COLORED CONCRETE.
- 7. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, VISIBILITY AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
- 8. RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS IF THEY ARE UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. TO SERVE AS A REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 4 FEET WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
- 9. ALL SIDEWALK PLANS AND DETAILS SHALL BE SUBMITTED AND APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGUALTION (TDLR).
- 10. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GRATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6 INCHES OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES. THE ONLY EXCEPTION IS AT CURB RAMPS. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHERE EVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB. CURB RAMPS ARE GENERALLY INTERPRETED AS ONLY THE PORTION TYING DIRECTLY INTO THE ROADWAY.
- 11. TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE.
- 12. ALL SIDEWALKS WILL BE DOWELED INTO EXISTING SIDEWALKS, DRIVEWALKS, DRIVEWAYS, INLET BOXES, RETAINING WALLS, ETC.
- 13. ALL SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 1:50, UNLESS A VARIANCE IS PROVIDED BY TDLR.

		REVISION NOTE:	ADOPTE	D 6/21/2006
	CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS PEDESTRIAN RAMPS GENERAL NOTES	DRAWING NAME:		SD28
GEORGETOWN	TEDESTRIAN RAMITS SERVERAL HOTES	scale: NTS	1/2003	
TEXAS Georgetown Utility Systems Your Community Owned Utility		DRAWN BY: MRS	APPROVED BY: TRB	







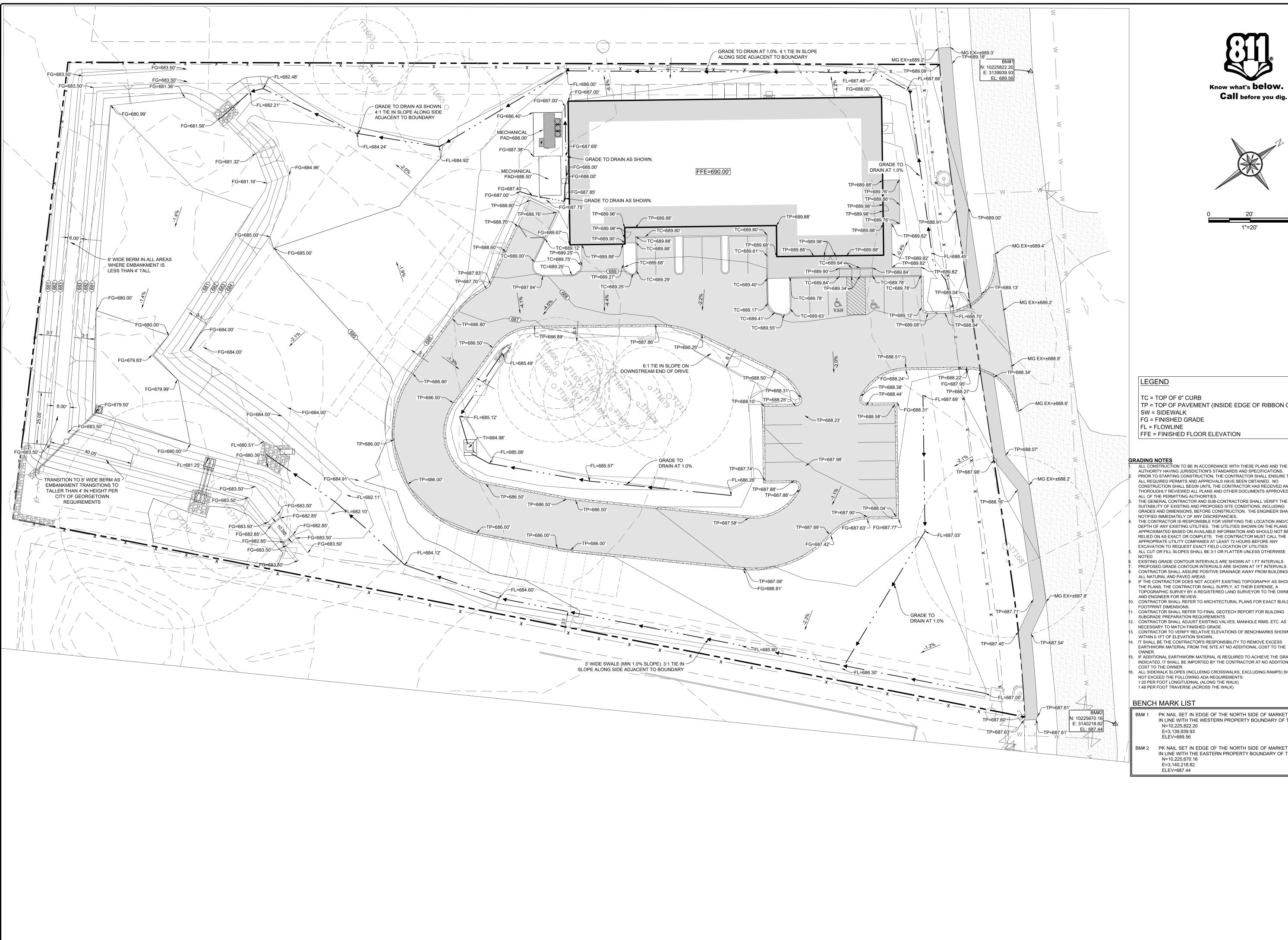
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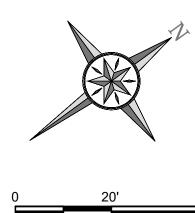
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DWG NAME:

JOB NO:











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GRADING

TP = TOP OF PAVEMENT (INSIDE EDGE OF RIBBON CURB) FG = FINISHED GRADE

FFE = FINISHED FLOOR ELEVATION

- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THESE PLANS AND THE AUTHORITY HAVING JURISDICTION'S STANDARDS AND SPECIFICATIONS. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY
- ALL OF THE PERMITTING AUTHORITIES. THE GENERAL CONTRACTOR AND SUB-CONTRACTORS SHALL VERIFY THE GRADES AND DIMENSIONS, BEFORE CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND/OR DEPTH OF ANY EXISTING UTILITIES. THE UTILITIES SHOWN ON THE PLANS ARE APPROXIMATED BASED ON AVAILABLE INFORMATION AND SHOULD NOT BE RELIED ON AS EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.
- EXISTING GRADE CONTOUR INTERVALS ARE SHOWN AT 1 FT INTERVALS. PROPOSED GRADE CONTOUR INTERVALS ARE SHOWN AT 1FT INTERVALS. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON
- THE PLANS. THE CONTRACTOR SHALL SUPPLY. AT THEIR EXPENSE. A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER AND ENGINEER FOR REVIEW. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT BUILDING
- FOOTPRINT DIMENSIONS. CONTRACTOR SHALL REFER TO FINAL GEOTECH REPORT FOR BUILDING SUBGRADE PREPARATION REQUIREMENTS.
- CONTRACTOR SHALL ADJUST EXISTING VALVES, MANHOLE RIMS, ETC. AS NECESSARY TO MATCH FINISHED GRADE.

 CONTRACTOR TO VERIFY RELATIVE ELEVATIONS OF BENCHMARKS SHOWN ARE WITHIN 0.1FT OF ELEVATION SHOWN..
- . IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE EXCESS EARTHWORK MATERIAL FROM THE SITE AT NO ADDITIONAL COST TO THE IF ADDITIONAL EARTHWORK MATERIAL IS REQUIRED TO ACHIEVE THE GRADES
- INDICATED, IT SHALL BE IMPORTED BY THE CONTRACTOR AT NO ADDITIONAL ALL SIDEWALK SLOPES (INCLUDING CROSSWALKS, EXCLUDING RAMPS) SHALL NOT EXCEED THE FOLLOWING ADA REQUIREMENTS:

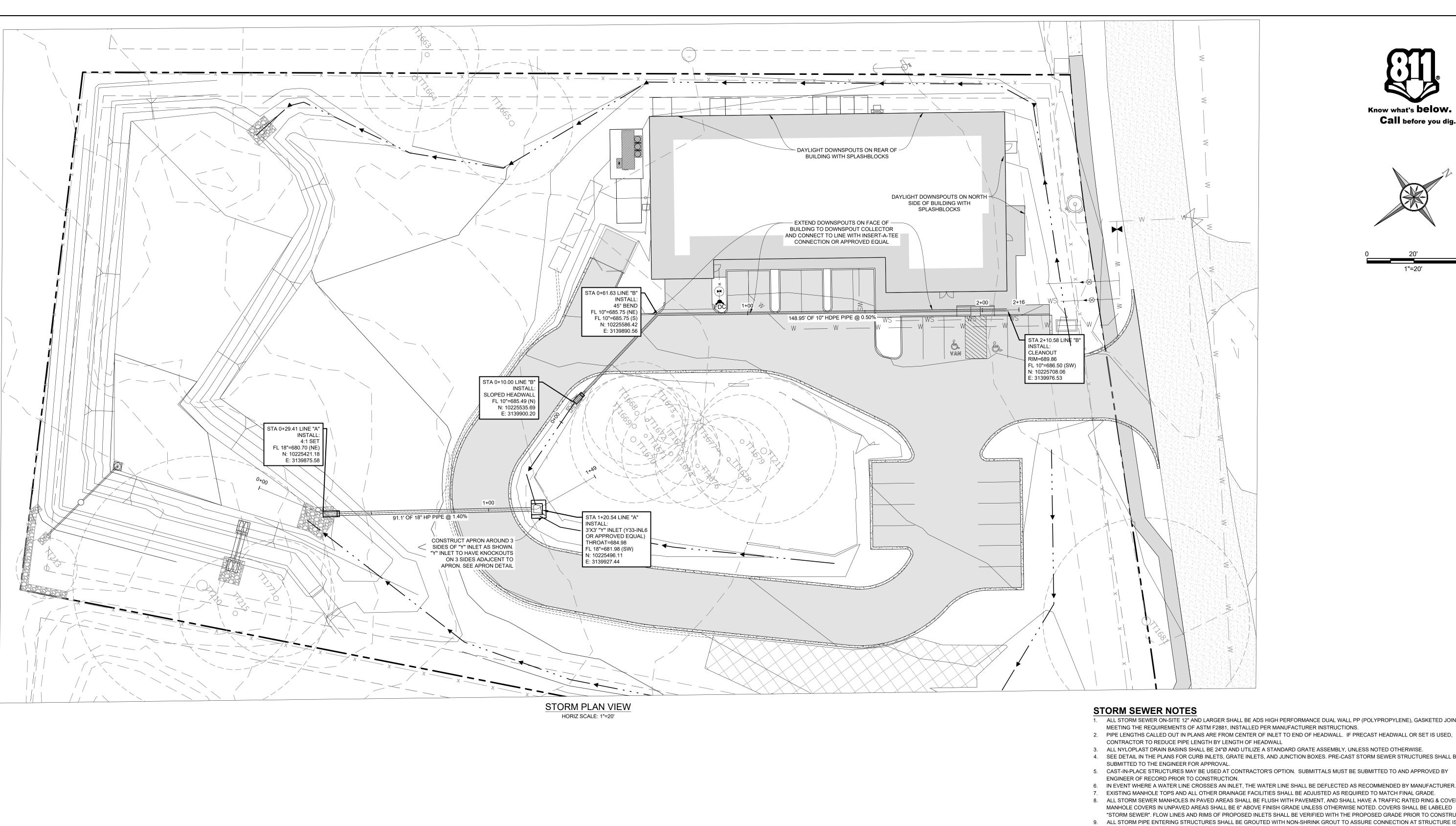
- BM# 1 PK NAIL SET IN EDGE OF THE NORTH SIDE OF MARKET STREET IN LINE WITH THE WESTERN PROPERTY BOUNDARY OF THE SITE. N=10,225,822.20 E=3,139,939.93 ELEV=689.56
 - PK NAIL SET IN EDGE OF THE NORTH SIDE OF MARKET STREET IN LINE WITH THE EASTERN PROPERTY BOUNDARY OF THE SITE. N=10,225,670.16 E=3,140,218.82

DATE NO. REVISION

DRAWN BY: APPROVED BY: DATE: 7/30/2024

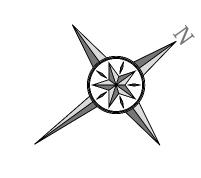
DWG NAME: C3.0 GRADING PLAN.DWG

JOB NO:















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REVISION

DRAWN BY: APPROVED BY:

DATE: 7/30/2024 DWG NAME: C3.1 STORM SEWER PLAN.DWG JOB NO:

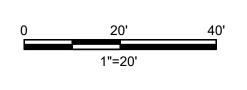
- 1. ALL STORM SEWER ON-SITE 12" AND LARGER SHALL BE ADS HIGH PERFORMANCE DUAL WALL PP (POLYPROPYLENE), GASKETED JOINT, PIPE
- 2. PIPE LENGTHS CALLED OUT IN PLANS ARE FROM CENTER OF INLET TO END OF HEADWALL. IF PRECAST HEADWALL OR SET IS USED, CONTRACTOR TO REDUCE PIPE LENGTH BY LENGTH OF HEADWALL
- 3. ALL NYLOPLAST DRAIN BASINS SHALL BE 24"Ø AND UTILIZE A STANDARD GRATE ASSEMBLY, UNLESS NOTED OTHERWISE.
- 4. SEE DETAIL IN THE PLANS FOR CURB INLETS, GRATE INLETS, AND JUNCTION BOXES. PRE-CAST STORM SEWER STRUCTURES SHALL BE
- 5. CAST-IN-PLACE STRUCTURES MAY BE USED AT CONTRACTOR'S OPTION. SUBMITTALS MUST BE SUBMITTED TO AND APPROVED BY
- 6. IN EVENT WHERE A WATER LINE CROSSES AN INLET, THE WATER LINE SHALL BE DEFLECTED AS RECOMMENDED BY MANUFACTURER. 7. EXISTING MANHOLE TOPS AND ALL OTHER DRAINAGE FACILITIES SHALL BE ADJUSTED AS REQUIRED TO MATCH FINAL GRADE.
- 8. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE A TRAFFIC RATED RING & COVER.
- "STORM SEWER". FLOW LINES AND RIMS OF PROPOSED INLETS SHALL BE VERIFIED WITH THE PROPOSED GRADE PRIOR TO CONSTRUCTION. 9. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED WITH NON-SHRINK GROUT TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR FROM INVERT IN TO INVERT OUT.
- 10. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT SIZE, NUMBER, AND LOCATION OF BUILDING ROOF DRAINS. 11. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING STORM SEWER STRUCTURES, PIPE, AND ALL UTILITIES CROSSING THE STORM SEWER PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD IF CONFLICT IS DISCOVERED. EXISTING DRAINAGE STRUCTURES TO REMAIN ON SITE SHALL BE INSPECTED AND REPAIRED AS NEEDED. EXISTING PIPES SHALL BE CLEANED TO REMOVE ALL SEDIMENT AND DEBRIS PRIOR TO PROJECT COMPLETION.
- 12. CONTRACTOR SHALL ADHERE TO OSHA RULES AND REGULATIONS REGARDING TRENCH SAFETY. ANY COSTS ASSOCIATED WITH TRENCH SAFETY ARE CONSIDERED SUBSIDIARY TO STORM SEWER PIPE INSTALLATION. NO EXTRA PAY FOR TRENCH SAFETY.
- 13. ROCK RIP RAP SHALL BE INSTALLED FLUSH WITH ADJACENT GRADE TO NOT IMPEDE FLOW.
- 14. PRIOR TO FINAL ACCEPTANCE, ALL STORM SEWERS SHALL BE INSPECTED AND CLEARED OF ANY SEDIMENT AND/OR DEBRIS.

UTILITY NOTES

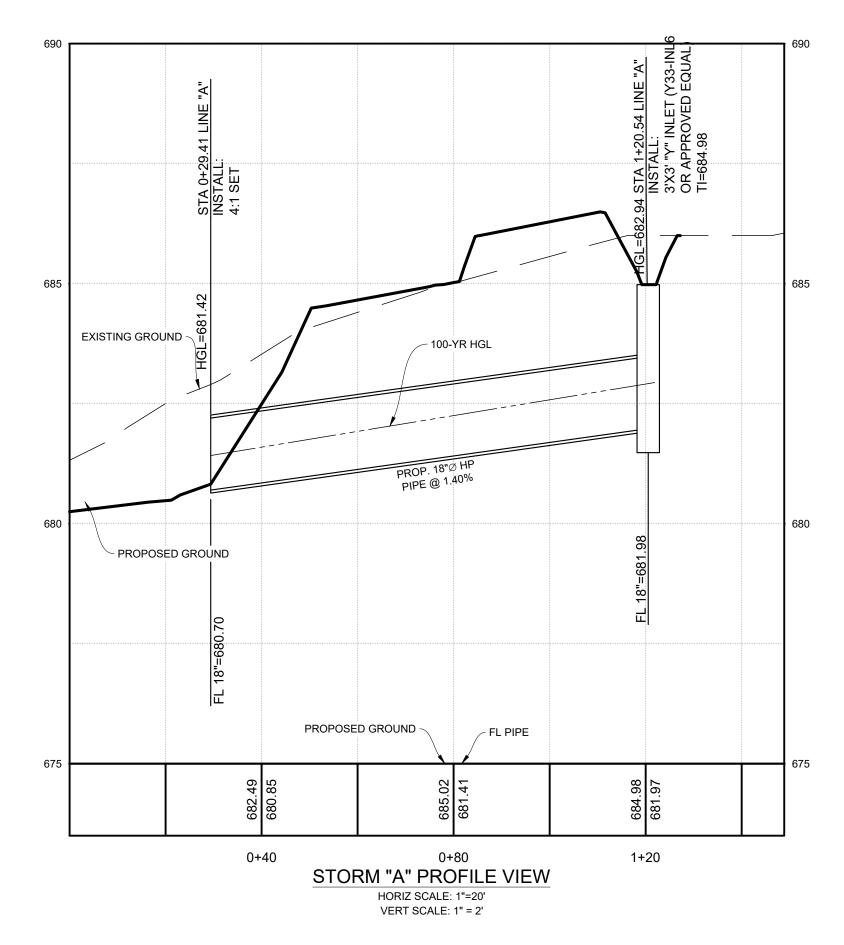
- 1. TRENCH SAFETY AND ALL CONSTRUCTION SITE SAFETY, IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR WHO CONTROLS THE MEANS, METHODS, AND SEQUENCING OF CONSTRUCTION OPERATIONS. UNDER NO CIRCUMSTANCES SHALL THE INFORMATION PROVIDED HEREIN BE INTERPRETED TO MEAN THE DESIGN TEAM (AKRON) IS ASSUMING RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY OR THE CONTRACTOR'S ACTIVITIES; SUCH RESPONSIBILITY SHALL NEITHER BE IMPLIED NOR INFERRED.
- 2. WHERE OPEN TRENCH OPERATIONS OBSTRUCT NORMAL TRAFFIC FLOW, THE CONTRACTOR SHALL NOTIFY ALL AFFECTED BUSINESS AND PROPERTY OWNERS AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- 3. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 72 HOURS PRIOR TO INSTALLING ALL SANITARY SEWER AND/OR WATER TAPS. 4. ANY SOFT OR UNSUITABLE MATERIALS ENCOUNTERED AT THE BOTTOM OF UTILITY TRENCH EXCAVATIONS SHOULD BE REMOVED AND
- SUPPORTED. 5. TRENCH BACKFILL SHALL BE INSTALLED WITH MECHANICAL TAMP FOR FULL DEPTH OF THE TRENCH WHEN WORKING IN PAVEMENT SECTIONS. CONTRACTOR SHALL COMPACT BACKFILL IN MAXIMUM 6 INCH LIFTS. ONE DENSITY AND WATER CONTENT TEST SHOULD BE PERFORMED FOR EVERY 50 LINEAR FEET OF COMPACTED UTILITY TRENCH BACKFILL.

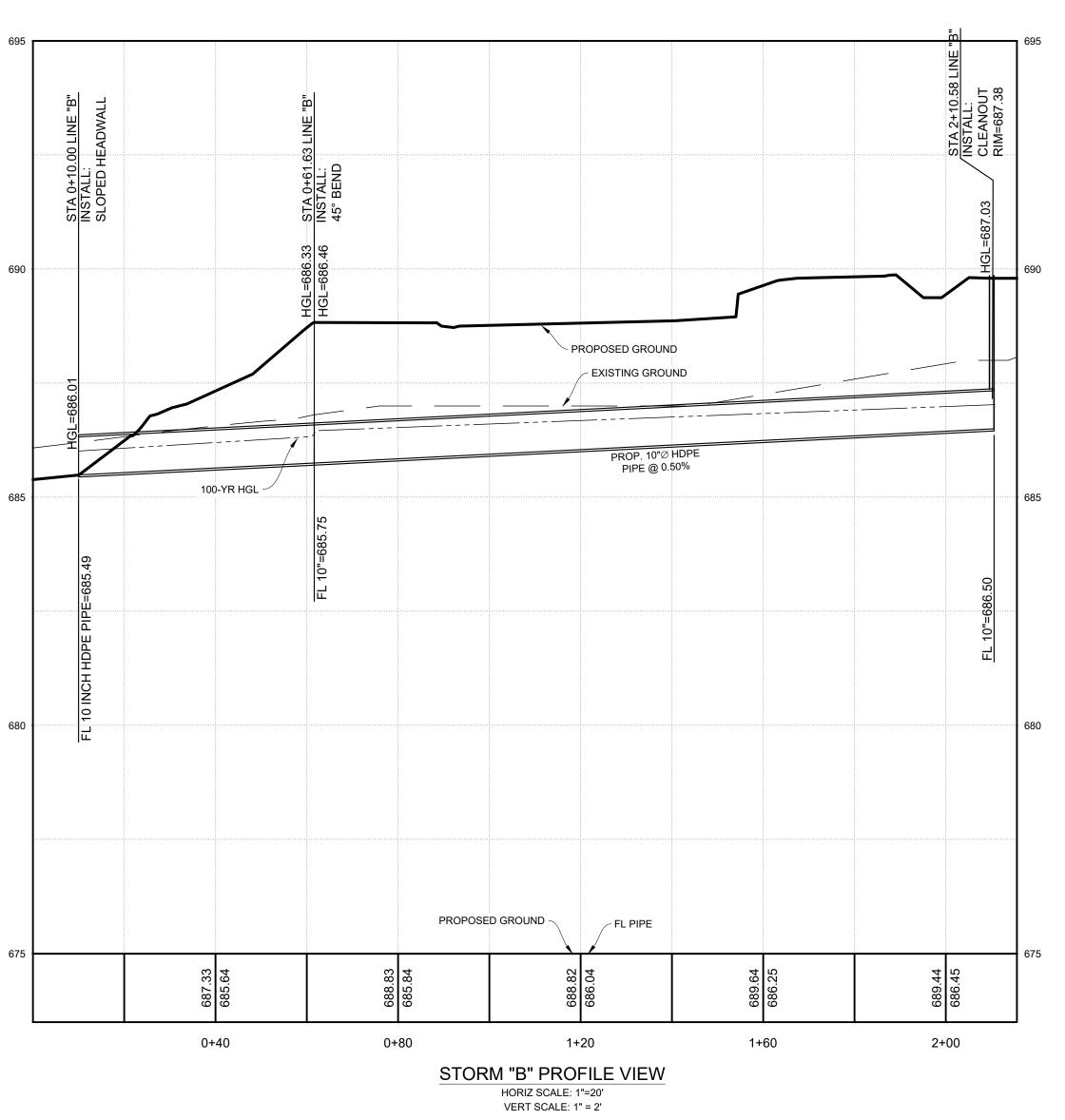
REPLACED WITH STRUCTURAL FILL OR BEDDING MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE UTILITY BE

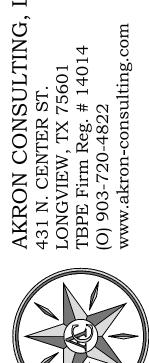
- 6. UTILITY TRENCHES IN PAVEMENT AREAS BE BACKFILLED WITH CEMENT TREATED SAND IN ORDER TO REDUCE THE POTENTIAL FOR SETTLEMENT OF THE BACKFILL. 7. MAINTAIN A MINIMUM OF 24" VERTICAL CLEARANCE BETWEEN WATER LINES, SANITARY LINE, STORM LINES AND GAS LINES (EXISTING
- AND PROPOSED) UNLESS SHOWN OTHERWISE. 8. ALL BORING PITS SHALL BE CLOSED THE SAME DAY THEY ARE OPENED UNLESS APPROVED BY ENGINEER. ANY PIT LEFT OPEN OVERNIGHT SHALL BE PROPERLY BARRICADED IN ACCORDANCE WITH TXDOT AND OSHA GUIDELINES.
- 9. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED.
- 10. ALL STEEL ENCASEMENT PIPE SHALL BE SCH. 40, UNLESS NOTED OTHERWISE.

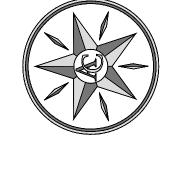














FORENSIC SPACES MARKET STREET | GEORGETOWN, TX 78626

136

DATE NO. REVISION

DRAWN BY: APPROVED BY: DATE: 7/30/2024 DWG NAME: C3.1 STORM SEWER PLAN.DWG JOB NO:

C3.2



	STORM A CALCULATIONS												
LINE	DOWNSTREAM LINE	SIZE (IN)	LENGTH (FT)	SLOPE (%)	FLOWLINE UP	FLOWLINE DOWN	CAPACITY (CFS)	FLOW RATE (CFS)	HGL UP	HGL DOWN (FT)	HGL JNCT	VELOCTY UP (FT/S)	VELOCITY DOWN (FT/S)
1	Outfall	18	91.131	1.40	681.98	680.70	13.48	6.23	682.94	681.42	682.94	5.19	7.48

	STORM B CALCULATIONS												
LINE	DOWNSTREAM	SIZE	LENGTH	SLOPE	FLOWLINE	FLOWLINE	CAPACITY	FLOW	LICLLID	HGL DOWN	LICL INICT	VELOCTY	VELOCITY
LINE	LINE	(IN)	(FT)	(%)	UP	DOWN	(CFS)	RATE	HGL UP (FT)	(FT)	HGL JNCT	UP (FT/S)	DOWN (FT/S)
1	Outfall	10	51.631	0.50	685.75	685.49	1.68	1.33	686.33	686.01	686.46	3.26	3.72
2	1	10	148.955	0.50	686.50	685.75	1.68	1.33	687.03	686.46	687.24	3.66	2.69

NOTES:

1) SEE PROPOSED DRAINAGE AREA PLAN FOR STRUCTURES FOR RATIONAL METHOD HYDROLOGIC CALCULATIONS.

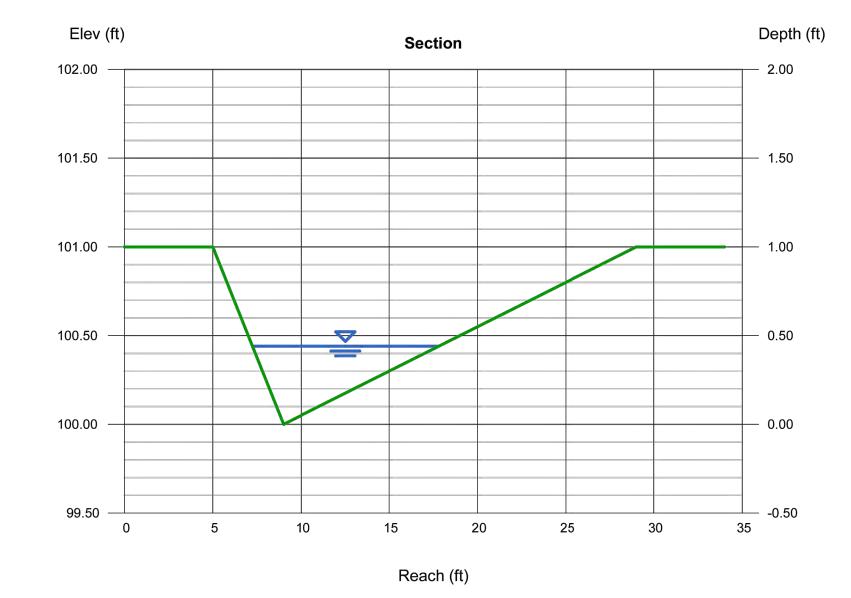
2) THE 100-YEAR FLOW VALUES WERE MODELED FOR THE STORM SYSTEMS AND FOR THE DRAINAGE SWALES IN AN EFFORT TO BE CONSERVATIVE.

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Tuesday, Jun 25 2024

Swale B

Triangular		Highlighted	
Side Slopes (z:1)	= 4.00, 20.00	Depth (ft)	= 0.44
Total Depth (ft)	= 1.00	Q (cfs)	= 4.130
. , ,		Area (sqft)	= 2.32
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 1.78
Slope (%)	= 1.00	Wetted Perim (ft)	= 10.63
N-Value	= 0.030	Crit Depth, Yc (ft)	= 0.38
		Top Width (ft)	= 10.56
Calculations		EGL (ft)	= 0.49
Compute by:	Known Q		
Known Q (cfs)	= 4.13		

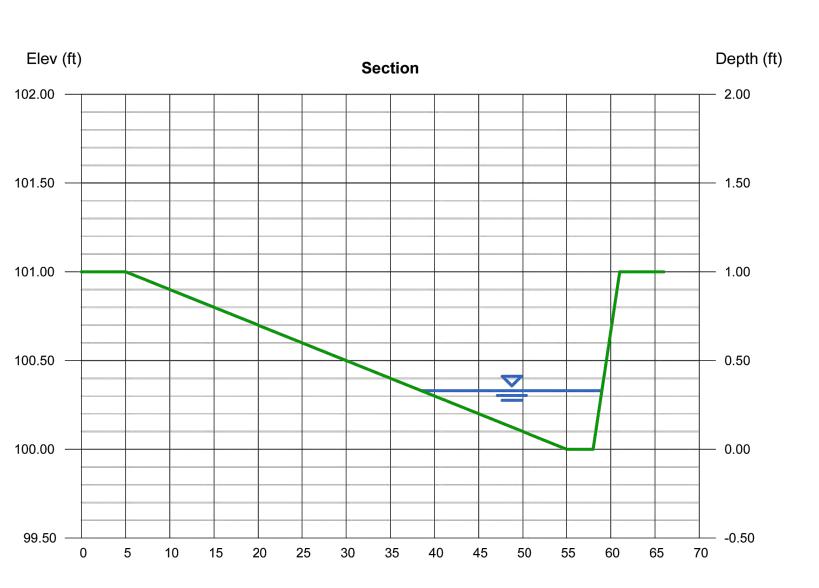


Channel Report

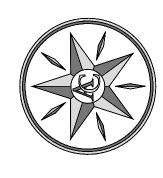
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Monday, Jul 15 2024

Swale D

T		IP-1-P-1-4-4	
Trapezoidal		Highlighted	
Bottom Width (ft)	= 3.00	Depth (ft)	= 0.33
Side Slopes (z:1)	= 50.00, 3.00	Q (cfs)	= 6.230
Total Depth (ft)	= 1.00	Area (sqft)	= 3.88
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 1.61
Slope (%)	= 1.00	Wetted Perim (ft)	= 20.55
N-Value	= 0.030	Crit Depth, Yc (ft)	= 0.28
		Top Width (ft)	= 20.49
Calculations		EGL (ft)	= 0.37
Compute by:	Known Q	, ,	
Known Q (cfs)	= 6.23		



Reach (ft)





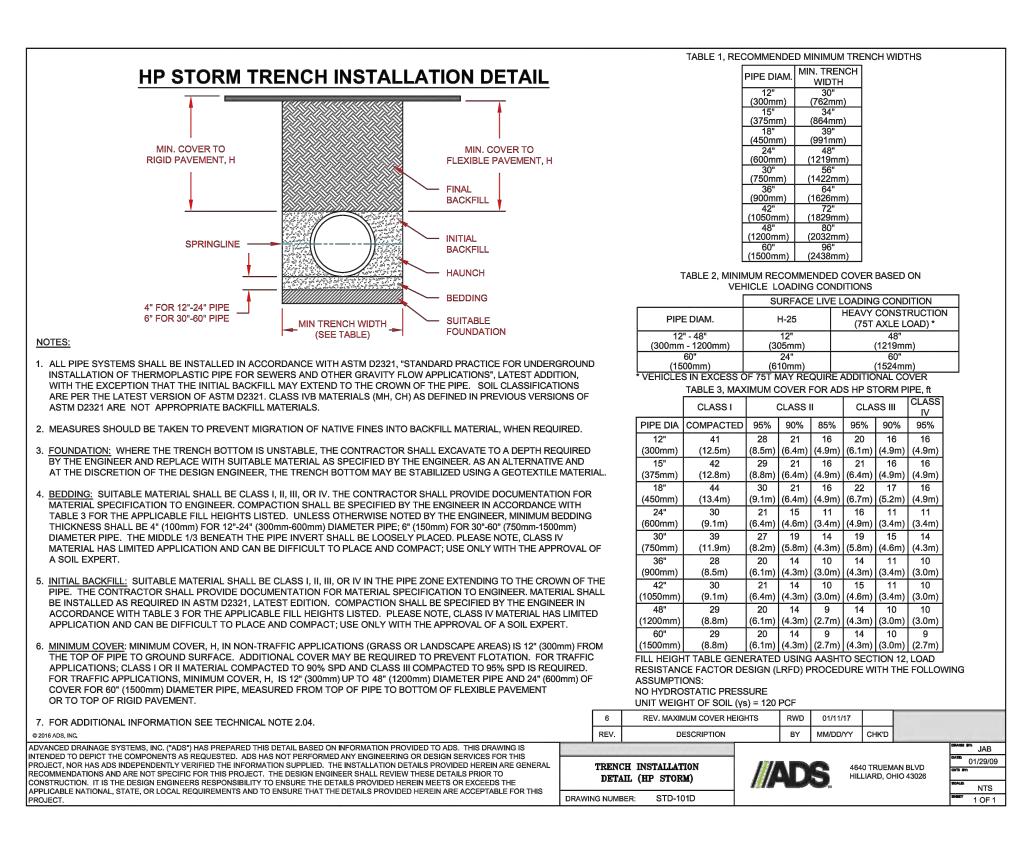
FORENSIC SPACES
MARKET STREET | GEORGETOWN, TX 78626

STORM SEWER CAL

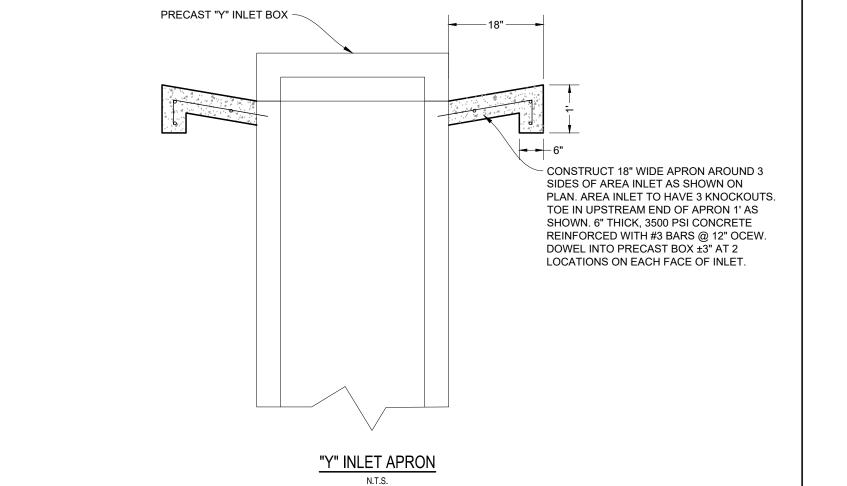
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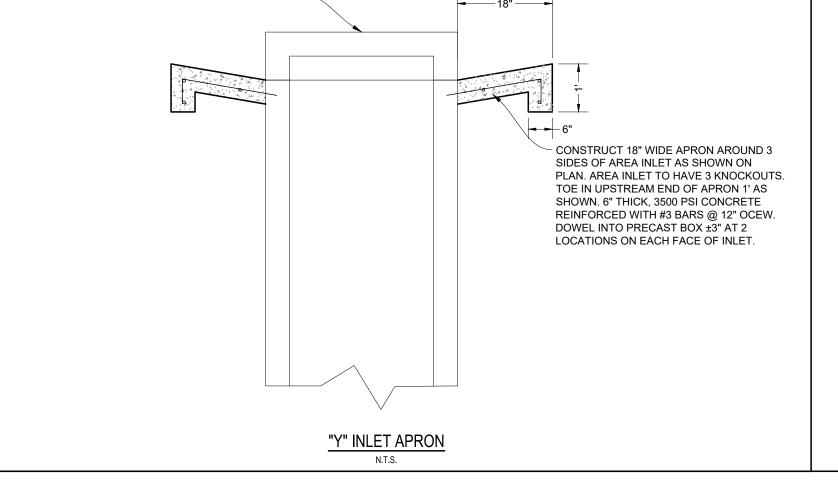
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C3.2



6" THICK 4.000 PSI CONCRETE REINFORCED WITH #4 BARS @ 9" OCEW PROPOSED D"Ø HDPE PROPOSED D"Ø HDPE SLOPE) 6" THICK 4,000 PSI CONCRETE REINFORCED WITH #4 BARS @ 9" OCEW **CONCRETE HEADWAL** TXDOT PRECAST DETAIL MAY BE USED EN LIEU OF CAST IN PLACE





ADS, Inc. Drainage Handbook **HP STORM 12"- 60" PIPE SPECIFICATION**

This specification describes 12- through 60-inch (300 to 1500 mm) HP Storm pipe for use in gravity-flow storm drainage applications.

Pipe Requirements

HP Storm pipe shall have a smooth interior and annular exterior corrugations.

 12- through 60-inch (300 to 1500 mm) pipe shall meet ASTM F2881 or AASHTO M330 Manning's "n" value for use in design shall be 0.012

Joint Performance

Pipe shall be joined using a bell & spigot joint meeting the requirements of ASTM F2881 or AASHTO M330. The joint shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have an exterior bell wrap installed by the manufacturer.

Fittings shall conform to ASTM F2881 or AASHTO M330. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM D3212.

Field Pipe and Joint Performance

To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F1417 or ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

Material Properties

Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M330. Section 6.1.

Installation

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot (0.3 m) and for 60-inch (1500 mm) diameter the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted), Class 2 (minimum 90% SPD), or Class 3 (minimum 95%) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.04. Contact your local ADS representative or visit our website at

www.adspipe.com for a copy of the latest installation guidelines.

Build America, Buy America (BABA)

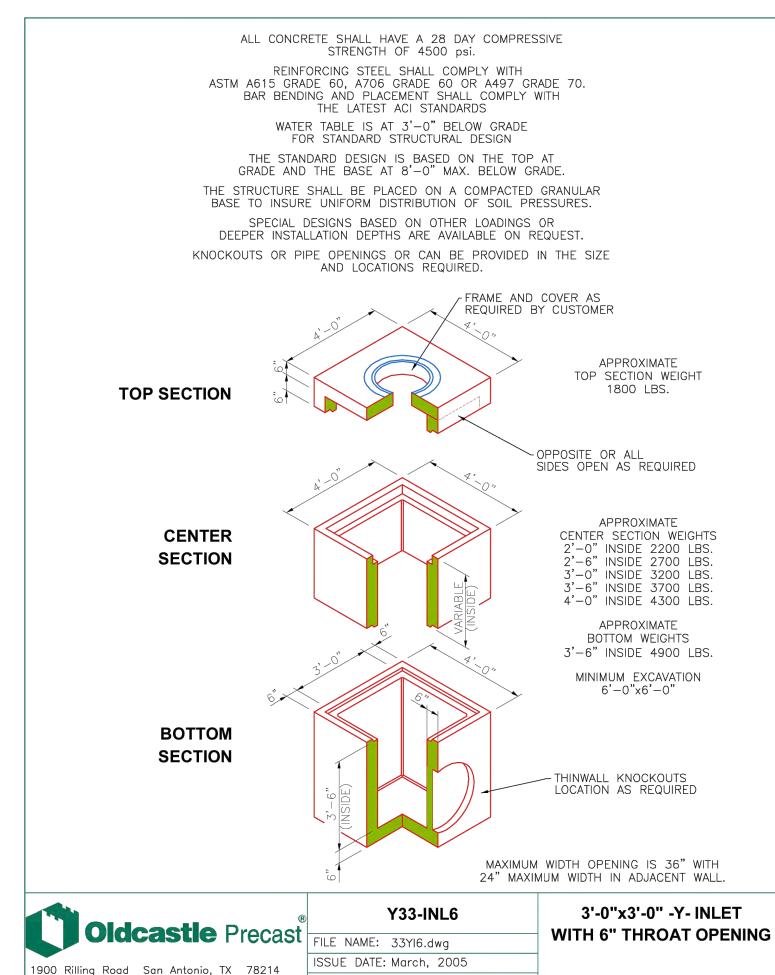
HP Storm pipe (per AASHTO), manufactured in accordance with ASTM F2881 or AASHTO M330, complies with the requirements in the Build America, Buy America (BABA) Act.

Pipe Dimensions

Average Pipe I.D.	12.2	15.1	18.2	24.1	30.2	36.0	42.0	47.9	59.9
in (mm)	(310)	(384)	(462)	(612)	(767)	(914)	(1067)	(1217)	(1521)
Average Pipe O.D.	14.5	17.7	21.4	28.0	35.5	41.5	47.4	54.1	67.1
in (mm)	(368)	(450)	(544)	(711)	(902)	(1054)	(1204)	(1374)	(1704)
Minimum Pipe Stiffness *	75	60	56	50	46	40	35	35	30
5% Deflection #/in./in. (kN/m²)	(517)	(414)	(386)	(345)	(317)	(276)	(241)	(241)	(207)

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Specifications ♦ 1-15



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CLASS I - ANGULAR CRUSHED STONE OR ROCK, DENSE OR

CLASS II - (GW, GP, SW, SP GW-GC, SP-SM) CLEAN, COARSE

CLASS III - (GM, GC, SM, SC) COARSE GRAINED MATERIALS

CLASS IV - (ML, CL, MH, CH) FINE GRAINED MATERIALS, SUCH

CLASS V - (OL, OH, PT) THESE MATERIALS INCLUDE ORGANIC

NOTE: EMBEDMENT MATERIALS SHOULD BE PLACED AND

AS FINE SAND AND SOILS CONTAINING 50

PERCENT OR MORE CLAY OR SILT. SOILS

CLASSIFIED AS CLASS IVa (ML OR CL) HAVE

MEDIUM TO LOW PLASTICITY AND ARE NOT

RECOMMENDED IN THE EMBEDMENT ZONE. SOILS

CLASSIFIED AS CLASS IVb (MH OR CH) HAVE HIGH

PLASTICITY AND ARE NOT RECOMMENDED FOR

SILTS AND CLAYS, PEAT AND OTHER ORGANIC

COMPACTED AT OPTIMUM MOISTURE CONTENT.

MATERIALS. THEY ARE NOT RECOMMENDED FOR

WITH FINES INCLUDING SILTY OR CLAYEY

GRAVELS OR SANDS, GRAVEL OR SAND MUST

COMPRISE MORE THAN 50 PERCENT OF CLASS III MATERIALS (1 1/2 INCHES MAXIMUM SIZE)

TO 1 1/2 INCHES IN SIZE.)

1/2 INCHES MAXIMUM SIZE.)

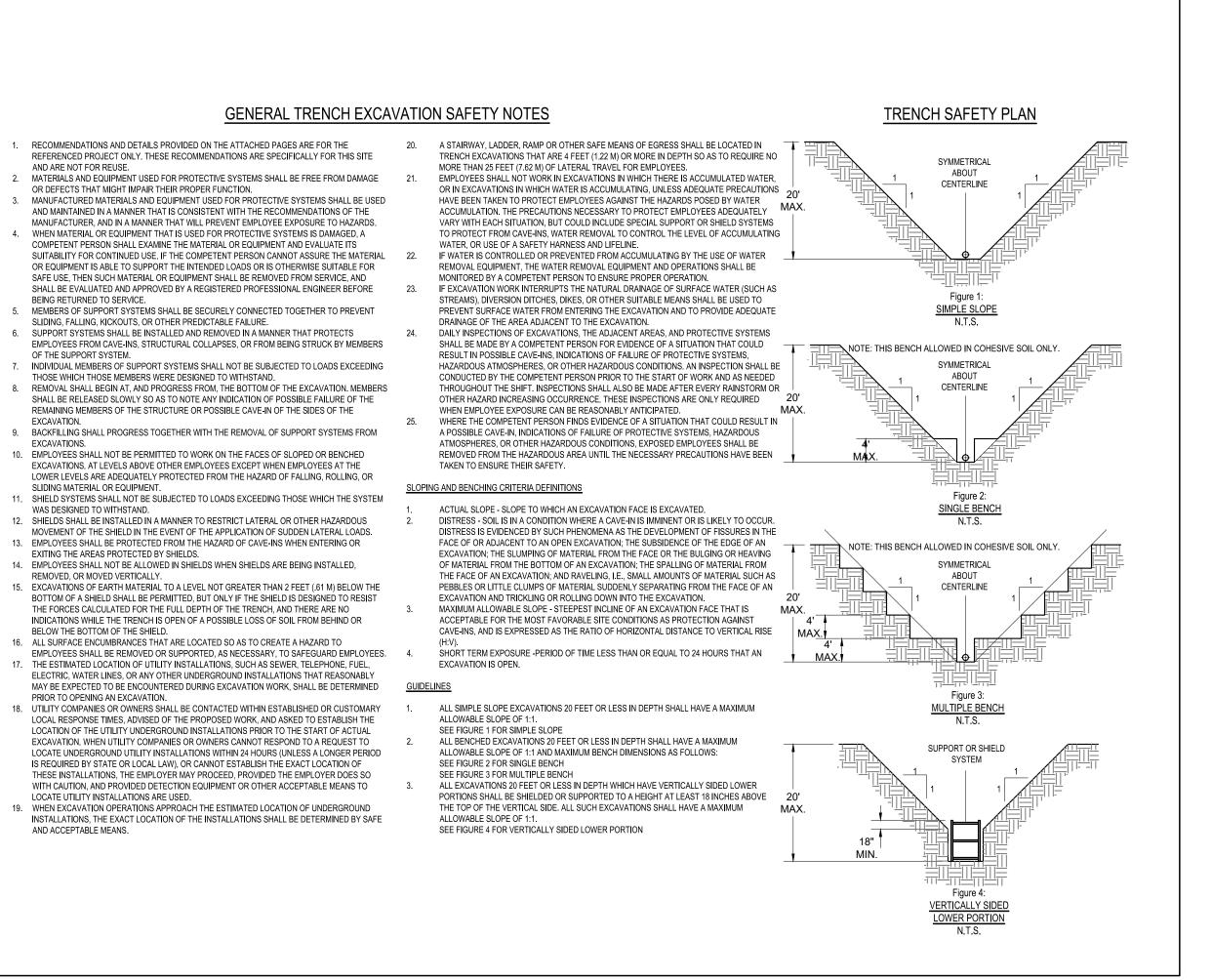
EMBEDMENT MATERIALS

EMBEDMENT MATERIALS

OPEN GRADED WITH LITTLE OR NO FINES (1/4 INCH

GRADED GRAINED MATERIALS, SUCH AS GRAVEL

COARSE SANDS AND GRAVEL/ SAND MIXTURES (1



ANDON COLE ALLEN

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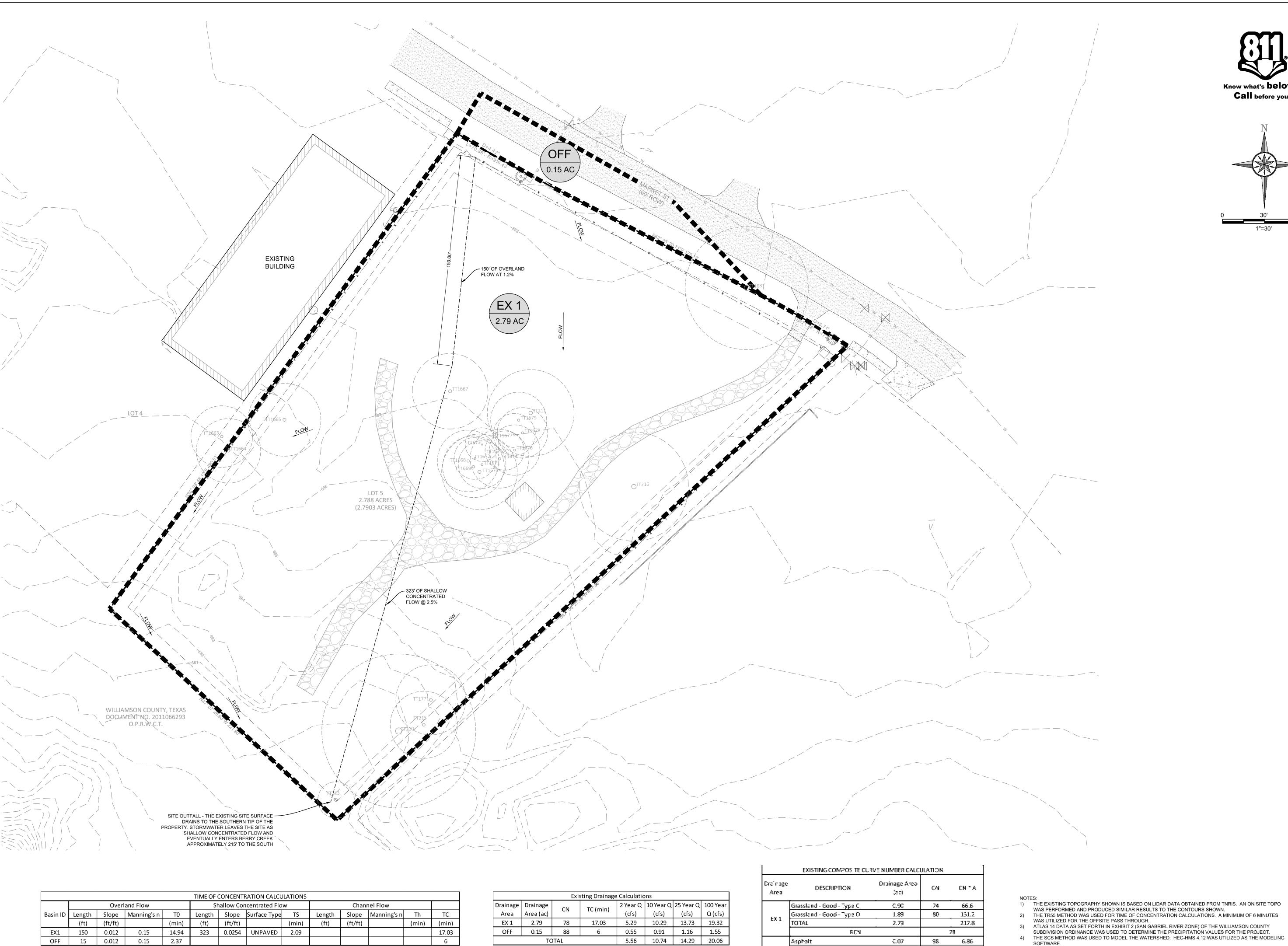
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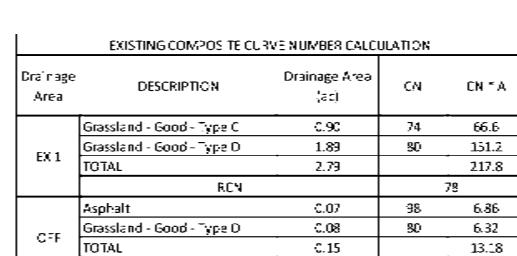
JOB NO:

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DWG NAME: C3.1 STORM SEWER PLAN.DWG

7/30/2024





RCN

- 5) PER WEB SOIL SURVEY, THE SITE CONSISTS OF TYPE C AND D SOILS. SEE CURVE NUMBER CALCULATION

Call before you dig.

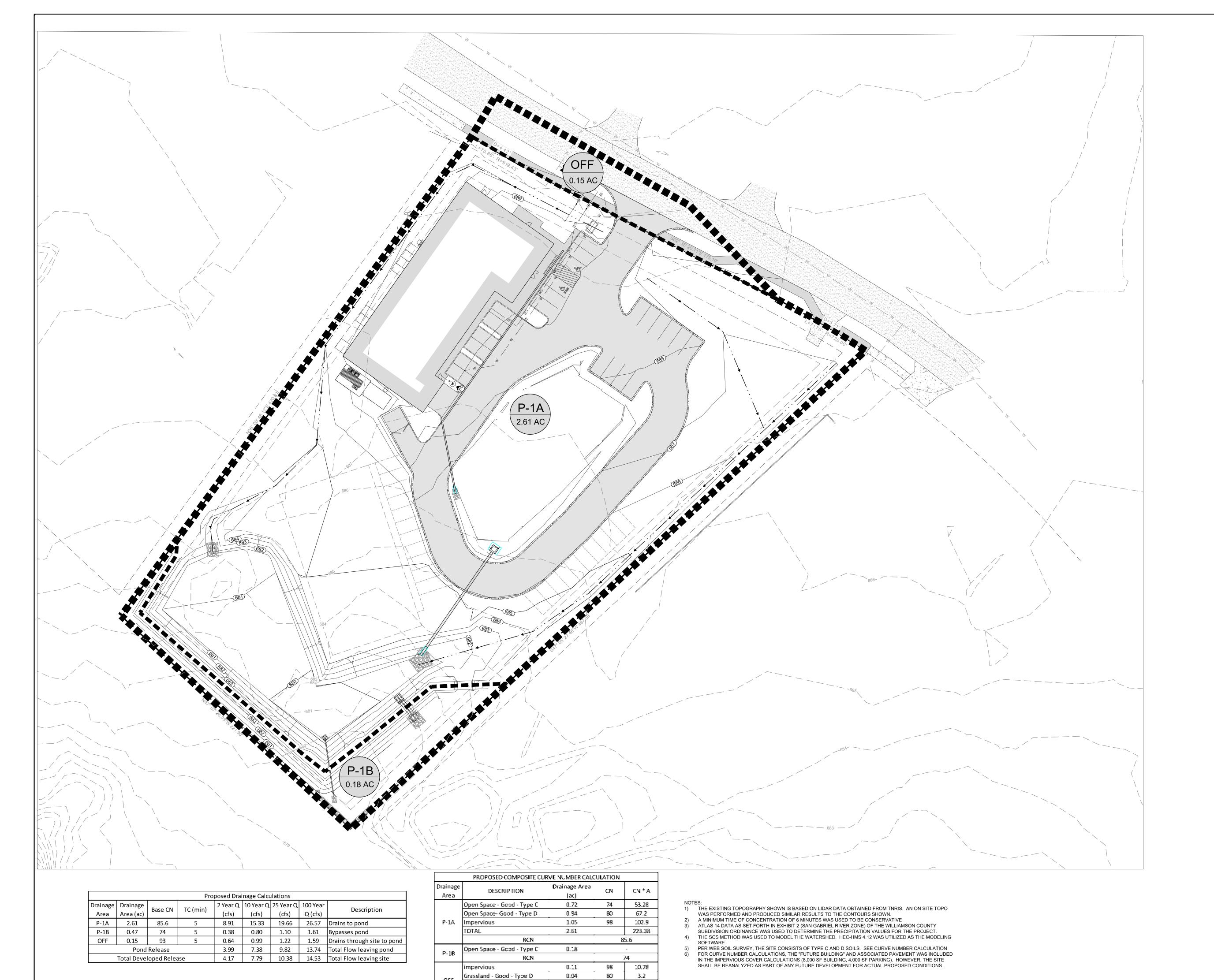
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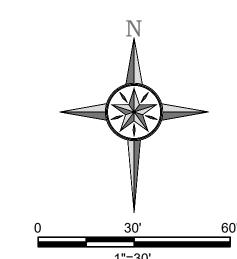
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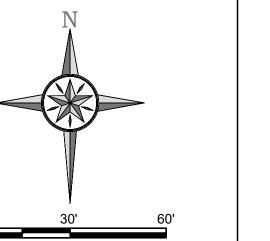
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FORENSIC SPACES
136 MARKET STREET | GEORGETOWN, TX

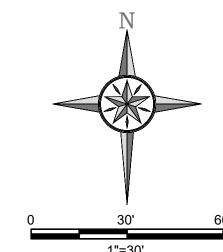
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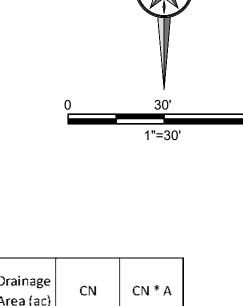
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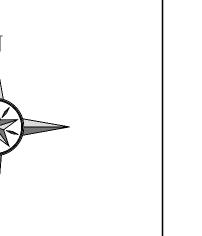
Drainage Area	DESCRIPTION	Drainage Area (ac)	CN	CN * A
	Impervious	0.29	0.97	0.276927
A 1	Grassland	0.32	0.36	0.115504
A1	TOTAL	0.61		0.392431
	Composite C		0.	.65
	Impervious	0.18	0.97	0.173157
D1	Grassland	0.48	0.36	0.173336
B1	TOTAL	0.66		0.346493
	Composite C		0.	.52
C1	Impervious	0.12	0.97	
C1	Composite C		0.	.97
	Impervious	0.35	0.97	0.340034
D1	Grassland	0.51	0.36	0.182736
D1	TOTAL	0.86		0.52277
	Composite C		0.	.61

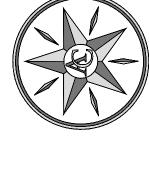
	Rational Method Calculations for Storm									
Drainage Area ID	Area (Ac)	Tc (Min)	С	I ₂₅ (in/hr)	Q ₂₅ (CFS)	I ₁₀₀ (in/hr)	Q ₁₀₀ (CFS)	Description		
A1	0.61	5	0.68	9.84	4.06	11.88	4.90	Partial to Storm "A"		
B1	0.66	5	0.52	9.84	3.42	11.88	4.13	To Swale "B"		
C1	0.12	5	0.97	9.84	1.10	11.88	1.33	To Storm "B"		
D1	0.87	5	0.61	9.84	5.22	11.88	6.30	To Swale "D"		
	A1+C1						6.23	Total To Storm "A"		

- THE EXISTING TOPOGRAPHY SHOWN IS BASED ON LIDAR DATA OBTAINED FROM TNRIS. AN ON SITE TOPO WAS PERFORMED AND PRODUCED SIMILAR RESULTS TO THE CONTOURS SHOWN.
 A MINIMUM TIME OF CONCENTRATION OF 5 MINUTES WAS USED TO BE CONSERVATIVE
 INTENSITY VALUES WERE OBTAINED USING TABLE 3-3 FROM THE GEORGETOWN DRAINAGE CRITERIA

- INTENSITY VALUES WERE OBTAINED USING TABLE 3-3 FROM THE GEORGETOWN DRAINAGE CRITERIA MANUAL
 THE RATIONAL METHOD WAS USED TO MODEL THE WATERSHEDS FOR THE INLET AND PIPE SYSTEMS AS WELL AS THE DRAINAGE SWALES THROUGHOUT THE SITE.
 FOR COMPOSITE "C" VALUE CALCULATIONS, A C OF 0.97 WAS USED FOR IMPERVIOUS COVER, AND A C OF 0.36 WAS USED FOR GRASSLAND 0-2% SLOPES. THE 100-YEAR C VALUE WAS USED FOR EACH STORM EVENT IN ORDER TO BE CONSERVATIVE. AREAS THAT ARE ANTICIPATED TO BE IMPERVIOUS IN THE FUTURE WERE CONSIDERED IMPERVIOUS.







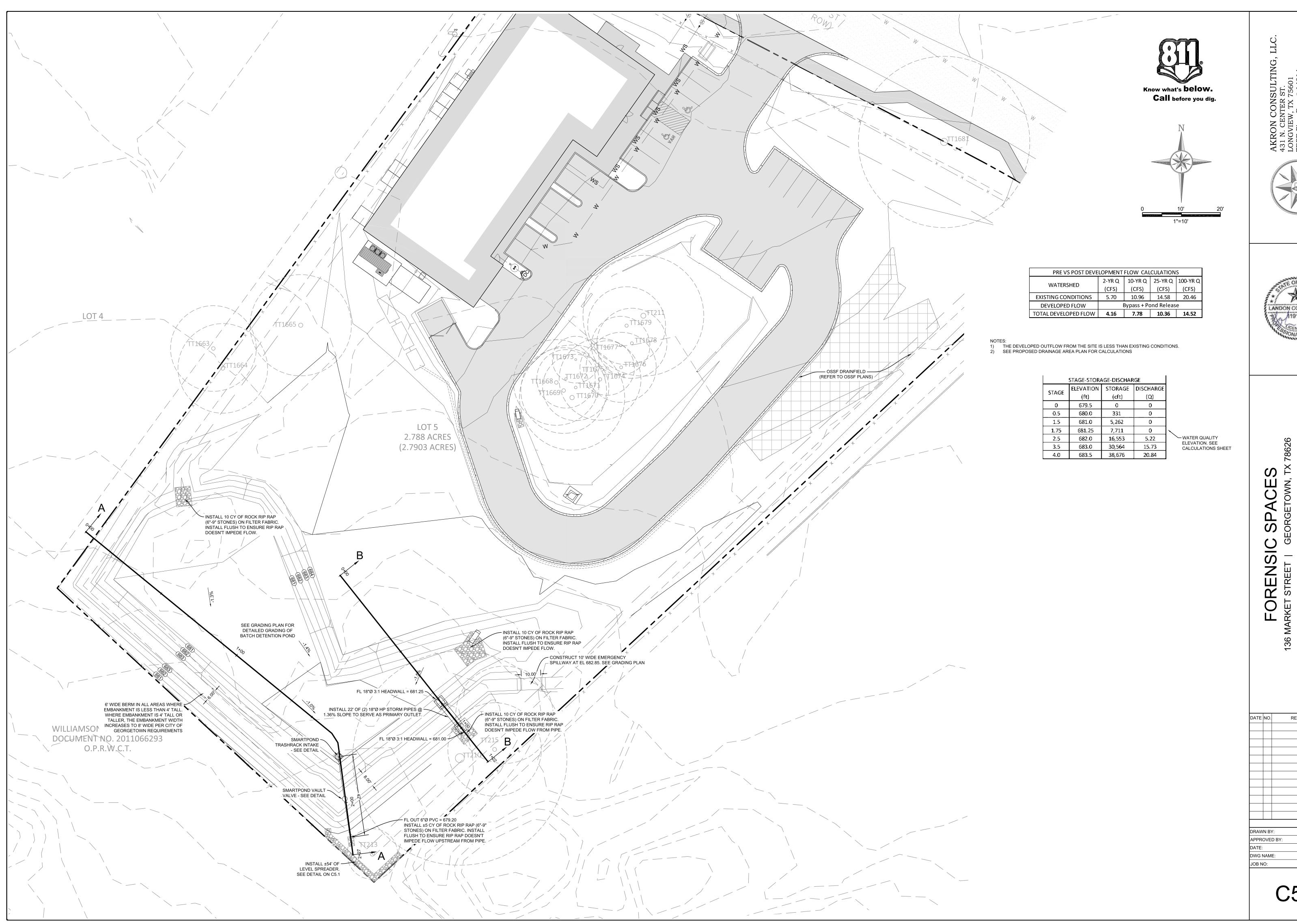


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DRAWN BY: APPROVED BY: DATE: 7/30/2024 DWG NAME: C4.2 DAP STORM.DWG JOB NO:

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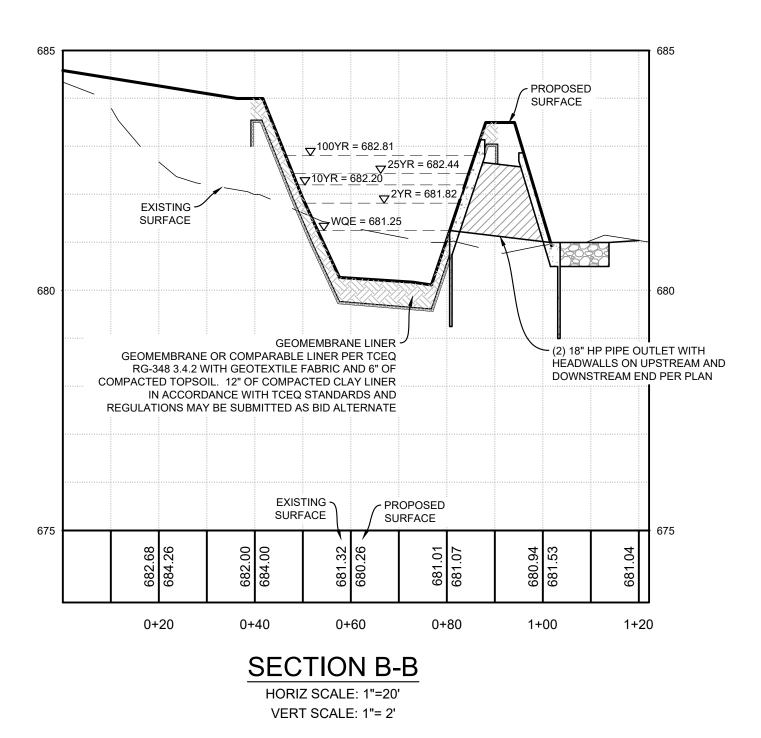


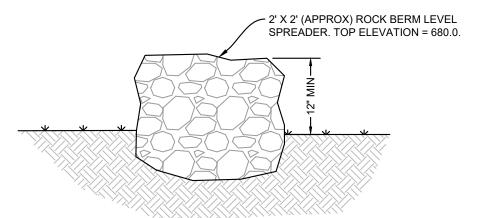




REVISION

SECTION A-A HORIZ SCALE: 1"=20' VERT SCALE: 1"= 2'





LEVEL SPREADER DETAIL

3.4.2 <u>Basin Lining Requirements</u>

Impermeable liners should be used for water quality basins (retention, extended detention, sand filters, wet ponds and constructed wetlands) located over the recharge zone and in areas with the potential for groundwater contamination. Impermeable liners may be clay, concrete or geomembrane. If geomembrane is used, suitable geotextile fabric should be placed on the top and bottom of the membrane for puncture protection and the liners covered with a minimum of 6 inches of compacted topsoil. The topsoil should be stabilized with appropriate vegetation. Clay liners should meet the specifications in Table 3-6 and have a minimum thickness of 12 inches.

Table 3-6 Clay Liner Specifications (COA, 2004)

Property	Test Method	Unit	Specification
Permeability	ASTM D-2434	cm/sec	1 x 10 ⁻⁶
Plasticity Index of Clay	ASTM D-423 & D-424	%	Not less than 15
Liquid Limit of Clay	ASTM D-2216	%	Not less than 30
Clay Particles Passing	ASTM D-422	%	Not less than 30
Clay Compaction	ASTM D-2216	%	95% of Standard Proctor
			Density

3-38

If a geomembrane liner is used it should have a minimum thickness of 30 mils and be ultraviolet resistant. The geotextile fabric (for protection of geomembrane) should be nonwoven geotextile fabric and meet the specifications in Table 3-7.

Table 3-7 Geotextile Fabric Specifications (COA, 2004)

Property	Test Method	Unit	Specification (min)
Unit Weight		oz/yd ²	8
Filtration Rate		in/sec	0.08
Puncture Strength	ASTM D-751*	lb	125
Mullen Burst Strength	ASTM D-751	psi	400
Tensile Strength	ASTM D-1682	1b	200
Equiv. Opening Size	US Standard Sieve	No.	80

Installation methods for geomembrane liners vary according to the site requirements. Figure 3-13 shows a typical installation on an earthen slope with the top of the liner keyed in above the maximum water level of the basin. Figure 3-14 presents an example of geomembrane liner attached to the exterior of a concrete or rock wall. The "liquid membrane" shown in the figure is a hot fluid-applied, rubberized asphalt typically used for waterproofing and roofing applications, such as Hydrotech 6125 or equivalent.

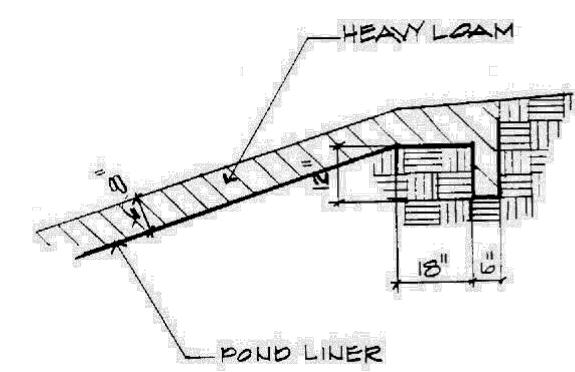
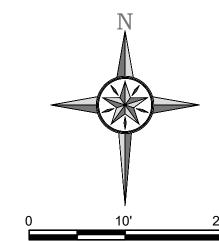


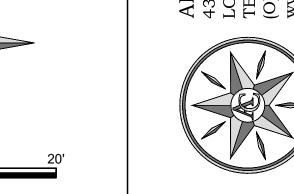
Figure 3-13 Example of Liner Installation on Earthen Slope (Courtesy COA)

3-39





Know what's **below.** Call before you dig.





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C SPACE GEORGETOWN

FORENSIC ARKET STREET | GE

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TCEQ'S 80% TSS REMOVAL CALCULATIONS

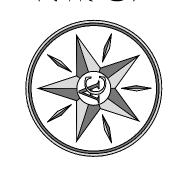
TSS Rem	oval Calculations 04-20-2009			Project Name:	136 Market	t St	
. oo Reili	oval Jaloulations v4-20-2003			Date Prepared:			
				7777777777777			
. The Req	uired Load Reduction for the total project:	Calculations fro	om RG-348		Pages 3-27 to	3-30	
	Page 3-29 Equation 3.3: L _M =	27 2(A. v D)					
	Page 3-29 Equation 3.3. L _M =	27.2(ANXI)					
where:	L _{M TOTAL PROJECT} =	Required TSS	removal resu	Ilting from the propose	d development	= 80% of increase	d loa
				area for the project			
	P=	Average annua	I precipitation	n, inches			
Site Data:	Determine Required Load Removal Based on the Entire Project						
	County = Total project area included in plan * =	Williamson 2.94					
Р	redevelopment impervious area within the limits of the plan * =		acres				
Total po	st-development impervious area within the limits of the plan* =	0.88	acres				
	Total post-development impervious cover fraction * = P =	0.30	inches				+
	L _{M TOTAL PROJECT} =	766	lbs.				
Nun	nber of drainage basins / outfalls areas leaving the plan area =	1					
. Drainage	Basin Parameters (This information should be provided	for each basi	n):				
	Drainage Basin/Outfall Area No. =	DA1					
	Total drainage basin/outfall area =	2.94	acres				
	velopment impervious area within drainage basin/outfall area =	0.00 0.88	acres				
	velopment impervious area within drainage basin/outfall area = opment impervious fraction within drainage basin/outfall area =		acres				
	L _M This basin =	TO HEAD OF THE PARTY OF THE PAR	lbs.				
la di a a ta	the arranged DMD Code for this besin						
. indicate	the proposed BMP Code for this basin.						
	Proposed BMP =						
	Proposed BMP = Removal efficiency =		on percent				
. Calculate	The state of the s	91	percent	Type.			
. Calculate	Removal efficiency =	91 sin by the seld	percent				
	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R =	91 sin by the sele (BMP efficience	percent ected BMP	x 34.6 + A _P x 0.54)	nt area		
. Calculate	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L_R = A_C =	91 sin by the seld (BMP efficience Total On-Site of	percent ected BMP y) x P x (A ₁) drainage area				
	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L_R = A_C = A_I =	91 sin by the self (BMP efficience Total On-Site of	percent ected BMP y) x P x (A ₁ x drainage area a proposed in	x 34.6 + A _P x 0.54) a in the BMP catchmen	area		
	Removal efficiency =	91 (BMP efficience Total On-Site of Impervious area pervious area of the self-self-self-self-self-self-self-self-	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment	area rea	3MP	
	Removal efficiency =	91 (BMP efficience Total On-Site of Impervious area Pervious area ITSS Load remains)	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	MP	
	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L_R = $A_C = A_I = A_P = L_R = A_C = $	91 sin by the self (BMP efficience Total On-Site of Impervious area Pervious area TSS Load remo	percent ected BMP y) x P x (A ₁ x drainage area a proposed in remaining in oved from thi acres	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	SMP	
	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L_R = $A_C = A_1 = A_P = L_R = A_1 = A_1 = A_2 = A_1 = A_2 = A_1 = A_2 = A_1 = A_2 = A_2 = A_1 = A_2 = A_2 = A_3 = A_3 = A_3 = A_4 = A_4 = A_5 = $	91 (BMP efficience Total On-Site of Impervious area in TSS Load removed.)	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	SMP	
	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L_R = $A_C = A_I = A_P = L_R = A_C = $	91 (BMP efficience) Total On-Site of Impervious area in TSS Load removed. 2.76 0.88 1.88	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	SMP	
	Removal efficiency = Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Barray RG-348 Page 3-33 Equation 3.7: L_R = A_C = A_I = A_R = A	91 (BMP efficience) Total On-Site of Impervious area in TSS Load removed. 2.76 0.88 1.88	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres acres	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	SMP	
	Removal efficiency = Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Barray RG-348 Page 3-33 Equation 3.7: L_R = A_C = A_I = A_R = A	91 (BMP efficience) Total On-Site of Impervious area in TSS Load removed. 2.76 0.88 1.88	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres acres	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	BMP	
where:	Removal efficiency = Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Barray RG-348 Page 3-33 Equation 3.7: L_R = A_C = A_I = A_R = A	91 Sin by the self (BMP efficience Total On-Site of Impervious area in TSS Load removed to the self of the self	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres acres	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	MP	
where:	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Barbara RG-348 Page 3-33 Equation 3.7: L_R = A_C = A_I = A_P = A_R	91 sin by the self (BMP efficienc Total On-Site of Impervious area Pervious area TSS Load remo 2.76 0.88 1.88 916 outfall area	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	SMP	
where:	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L_R = $A_C = A_I = A_P = A_R = A_I = A_P = A_R = $	91 sin by the self (BMP efficienc Total On-Site of Impervious area Pervious area TSS Load remo 2.76 0.88 1.88 916 outfall area	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres acres	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	SMP	
where:	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Barbara RG-348 Page 3-33 Equation 3.7: L_R = A_C = A_I = A_P = A_R	91 sin by the self (BMP efficienc Total On-Site of Impervious area Pervious area TSS Load remove 2.76 0.88 1.88 916 outfall area	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs	x 34.6 + A _P x 0.54) a in the BMP catchmen n the BMP catchment the BMP catchment a	area rea	SMP	
where:	Removal efficiency = Maximum TSS Load Removed (L_R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L_R = A_C = A_I = A_P = A_R = $A_$	91 sin by the self (BMP efficience Total On-Site of Impervious area Pervious area TSS Load remove 2.76 0.88 1.88 916 outfall area 766 0.84	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B	Pages 3-34 to 3-36	
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _I = A _P = L _R = Fraction of Annual Runoff to Treat the drainage basin / Desired L _{M THIS BASIN} = F = Capture Volume required by the BMP Type for this drainage	91 sin by the self (BMP efficienc Total On-Site of Impervious area in TSS Load removed and the self of the self	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _P = L _R = A _P = L _R = Fraction of Annual Runoff to Treat the drainage basin / Desired L _{M THIS BASIN} =	91 sin by the self (BMP efficienc Total On-Site of Impervious area in TSS Load removed and the self of the self	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		3
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _C = A _I = A _C = A _I = A _P = L _R = EFraction of Annual Runoff to Treat the drainage basin / Desired L _{M THIS BASIN} = F = Capture Volume required by the BMP Type for this drainage basin / Rainfall Depth =	91 Isin by the self (BMP efficience Total On-Site of Impervious area in TSS Load removed and Impervious area in TSS Load re	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		3
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _I = A _P = L _R = A _I = A _P = EFraction of Annual Runoff to Treat the drainage basin / Desired L _{M THIS BASIN} = F = Capture Volume required by the BMP Type for this drainage basin / Rainfall Depth = Post Development Runoff Coefficient =	91 Isin by the self (BMP efficience Total On-Site of Impervious area in TSS Load removed and Impervious area in TSS Load re	percent ected BMP y) x P x (A ₁ x drainage area a proposed in remaining in oved from thi acres acres acres lbs	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _I = A _P = L _R = A _I = A _P = EFraction of Annual Runoff to Treat the drainage basin / Desired L _{M THIS BASIN} = F = Capture Volume required by the BMP Type for this drainage basin / Rainfall Depth = Post Development Runoff Coefficient =	91 Isin by the self (BMP efficience Total On-Site of Impervious area in TSS Load removed and Impervious area in TSS Load re	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs lbs.	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		5
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _C = A _I = A _P = L _R = Fraction of Annual Runoff to Treat the drainage basin / Desired L _{M THIS BASIN} = F = Capture Volume required by the BMP Type for this drainage basin / Rainfall Depth = Post Development Runoff Coefficient = On-site Water Quality Volume =	91 sin by the self (BMP efficience Total On-Site of Impervious area in TSS Load removed and Impervious area in TSS Load remo	percent ected BMP y) x P x (A ₁ x drainage area a proposed in remaining in oved from thi acres acres acres lbs lbs. butfall area. inches cubic feet	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _I = A _P = L _R = A _I = A _P = L _R = A _I	91 sin by the self (BMP efficienc Total On-Site of Impervious area Pervious area Pervious area 1.38 916 outfall area 766 0.84 nage basin / c 1.26 0.27 3379 Calculations fro 0.00 0.00	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres acres lbs lbs.	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		3
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _I = A _P = L _R = A _I = A _P = L _R = A _I	91 sin by the self (BMP efficience Total On-Site of Impervious area Pervious area Pervious area 1.76 0.88 1.88 916 outfall area 766 0.84 nage basin / outfall area 1.26 0.27 3379 Calculations fro 0.00 0.00 0	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres lbs lbs. lbs. putfall area. inches cubic feet	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		
where:	Removal efficiency = Maximum TSS Load Removed (L _R) for this Drainage Ba RG-348 Page 3-33 Equation 3.7: L _R = A _C = A _I = A _P = L _R = A _I = A _P = L _R = A _I = A _P = L _R = A _I	91 sin by the self (BMP efficience Total On-Site of Impervious area Pervious area Pervious area 1.76 0.88 1.88 916 outfall area 766 0.84 nage basin / outfall area 1.26 0.27 3379 Calculations fro 0.00 0.00 0	percent ected BMP y) x P x (A ₁) drainage area a proposed in remaining in oved from thi acres acres lbs lbs. lbs. putfall area. inches cubic feet	x 34.6 + A _P x 0.54) a in the BMP catchment the BMP catchment a s catchment area by t	area rea he proposed B		

WATER QUALITY NOTES

- WATER QUALITY VOLUME REQUIRED BY TCEQ TO MEET 80% TSS REMOVAL REQUIREMENTS = 4,055 CF
 WATER QUALITY VOLUME REQUIRED BY THE CITY OF GEORGETOWN TO MEET 85% TSS REMOVAL REQUIREMENTS = 5,149 CF
 WATER QUALITY VOLUME PROVIDED AT ELEVATION 681.25 = 7,711 CF
- 4. WATER QUALITY POND IS HAS ADDITIONAL WATER QUALITY STORAGE FOR POTENTIAL FUTURE DEVELOPMENT. POTENTIAL FUTURE IMPERVIOUS AREA IS NOT INCLUDED IN SEDIMENT LOAD CALCULATIONS. THE SITE AND WATER QUALITY POND SHALL BE REANALYZED IN THE FUTURE FOR ANY FUTURE DEVELOPMENT ON THE SITE.

CITY OF GEORGETOWN'S 85% TSS REMOVAL CALCULATIONS

	al Calculations 04-20-2009			Project Name:		t St	
				Date Prepared:	6/5/2024		
he Require	ed Load Reduction for the total project:	Calculations fr	om RG-348		Pages 3-27 to	3-30	
	Page 3-29 Equation 3.3: L _M =	27.2(A _N x P)					
whore	1	Required TSS	removal resu	ulting from the propose	d develonment	= 85% 0	of increased l
where:				area for the project	a development	- 65760	i ilicieaseu i
		Average annua					
		Average armue	ii precipitatio	on, mones			
Site Data:	Determine Required Load Removal Based on the Entire Project	ot					
	County =						
	Total project area included in plan *=		acres				
	redevelopment impervious area within the limits of the plan * = ost-development impervious area within the limits of the plan* =	The same of the sa	acres				
rotal po	Total post-development impervious cover fraction * =		acres				
	P =	32	inches				
			1101011111				
	L _M TOTAL PROJECT =	814	lbs.				
Non	wher of drainers begins / outfalls gross lessing the plan area	1					
Nui	mber of drainage basins / outfalls areas leaving the plan area =						
rainage Ba	asin Parameters (This information should be provided for	each basin):					
	Drainage Basin/Outfall Area No. =	DA1					
	Total drainage basin/outfall area =	2.94	acres				
Prede	evelopment impervious area within drainage basin/outfall area =		acres				
	evelopment impervious area within drainage basin/outfall area =		acres				
Post-devel	opment impervious fraction within drainage basin/outfall area =	0.30					
	L _{M THIS BASIN} =	814	lbs.				
Indicate the	proposed BMP Code for this basin.						
	Proposed BMP =	Batch Detent	on				
	Removal efficiency =		percent				
Calculate M	aximum TSS Load Removed (L _R) for this Drainage Basin	by the colocte	d PMP Tur	1			
Carculate W	aximum 133 Load Removed (LR) for this Dramage Basin	by the selecti	EU DIVIT TYP	e.			
	RG-348 Page 3-33 Equation 3.7: L _R =	(BMP efficience	y) x P x (A ₁	x 34.6 + A _P x 0.54)			
where:		Life out that the second section is	same and the beautiful to the con-		- A - C - C - C - C - C - C - C - C - C		
			التعرب بالدارات والمراكلة والمراجع العارجاته	a in the BMP catchme			
	A ₁ =	Impervious are	a proposed i	in the BMP catchment	area		
	A ₁ =	Impervious are	a proposed i		area		
	A ₁ = A _P =	Impervious area	a proposed i remaining in	in the BMP catchment	area rea	вмР	
	A _I = A _P = L _R =	Impervious area Pervious area TSS Load rem	a proposed in remaining in oved from th	in the BMP catchment the BMP catchment a	area rea	вмР	
	$A_{I} = A_{P} = A_{R} = A_{C} = A_{C$	Impervious area Pervious area TSS Load rem 2.76	a proposed i remaining in	in the BMP catchment the BMP catchment a	area rea	BMP	
	$A_{I} = A_{P} = A_{P} = A_{C} = A_{I} = A_{I$	Impervious area Pervious area TSS Load rem 2.76 0.88	a proposed in remaining in oved from th	in the BMP catchment the BMP catchment a	area rea	BMP	
	$A_{I} =$ $A_{P} =$ $L_{R} =$ $A_{C} =$ $A_{I} =$ $A_{P} =$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88	a proposed in remaining in oved from the acres acres acres	in the BMP catchment the BMP catchment a	area rea	BMP	
	$A_{I} = A_{P} = A_{P} = A_{C} = A_{I} = A_{I$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88	a proposed in remaining in oved from the acres acres	in the BMP catchment the BMP catchment a	area rea	BMP	
	$A_{I} =$ $A_{P} =$ $L_{R} =$ $A_{C} =$ $A_{I} =$ $A_{P} =$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88	a proposed in remaining in oved from the acres acres acres	in the BMP catchment the BMP catchment a	area rea	вмР	
	$A_{I} =$ $A_{P} =$ $L_{R} =$ $A_{C} =$ $A_{I} =$ $A_{P} =$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88	a proposed in remaining in oved from the acres acres acres	in the BMP catchment the BMP catchment a	area rea	BMP	
	$A_{I} =$ $A_{P} =$ $L_{R} =$ $A_{C} =$ $A_{I} =$ $A_{P} =$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916	a proposed in remaining in oved from the acres acres acres	in the BMP catchment the BMP catchment a	area rea	BMP	
	$A_{I}=A_{P}=A_{P}=A_{R$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916	a proposed in remaining in oved from the acres acres acres lbs	in the BMP catchment the BMP catchment a	area rea	BMP	
	$A_{I} = A_{P} = A_{P} = A_{R} = A_{R$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916	a proposed in remaining in oved from the acres acres acres	in the BMP catchment the BMP catchment a	area rea	ВМР	
	$A_{I}=A_{P}=A_{P}=A_{R$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area	a proposed in remaining in oved from the acres acres acres lbs	in the BMP catchment the BMP catchment a	area rea	BMP	
Calculate F	$A_{I}=$ $A_{P}=$ $L_{R}=$ $A_{C}=$ $A_{I}=$ $A_{I}=$ $A_{P}=$ $L_{R}=$ $L_{R}=$ raction of Annual Runoff to Treat the drainage basin / out	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89	a proposed in remaining in oved from the acres acres acres lbs	in the BMP catchment the BMP catchment a	area rea he proposed B		-34 to 3-36
Calculate F	$A_{I}=$ $A_{P}=$ $L_{R}=$ $A_{C}=$ $A_{I}=$ $A_{P}=$ $L_{R}=$ $L_{R}=$ $Taction of Annual Runoff to Treat the drainage basin / out Desired \ L_{M \ THIS \ BASIN}= F=$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89	a proposed in remaining in oved from the acres acres acres lbs	in the BMP catchment at the BMP catchment a is catchment area by t	area rea he proposed B		-34 to 3-36
Calculate F	$A_{l}=\\A_{p}=\\L_{R}=\\A_{c}=\\A_{l}=\\A_{p}=\\L_{R}=\\$ raction of Annual Runoff to Treat the drainage basin / out $Desired\ L_{M\ THIS\ BASIN}=\\F=$ apture Volume required by the BMP Type for this drainage $Rainfall\ Depth=$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89 ge basin / outfall	a proposed in remaining in oved from the acres acres acres lbs	in the BMP catchment at the BMP catchment a is catchment area by t	area rea he proposed B		-34 to 3-36
Calculate F	$A_{l} = A_{P} = A_{R} = A_{R$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89 ge basin / outfi	a proposed in remaining in oved from the acres acres acres lbs. Ilbs. Ilbs.	in the BMP catchment at the BMP catchment a is catchment area by t	area rea he proposed B		-34 to 3-36
Calculate F	$A_{l}=\\A_{p}=\\L_{R}=\\A_{c}=\\A_{l}=\\A_{p}=\\L_{R}=\\$ raction of Annual Runoff to Treat the drainage basin / out $Desired\ L_{M\ THIS\ BASIN}=\\F=$ apture Volume required by the BMP Type for this drainage $Rainfall\ Depth=$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89 ge basin / outfi	a proposed in remaining in oved from the acres acres acres libs	in the BMP catchment at the BMP catchment a is catchment area by t	area rea he proposed B		-34 to 3-36
Calculate F	$A_{l} = A_{P} = A_{R} = A_{R$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89 ge basin / outfall 1.60 0.27 4291	a proposed in remaining in oved from the acres acres acres lbs. Ibs. Ibs. inches cubic feet	the BMP catchment a the BMP catchment a is catchment area by the Calculations from RG	area rea he proposed B		-34 to 3-36
Calculate F	$A_{l} = A_{P} = A_{R} = A_{R$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89 ge basin / outfi	a proposed in remaining in oved from the acres acres acres lbs. Ibs. Ibs. inches cubic feet	the BMP catchment a the BMP catchment a is catchment area by the Calculations from RG	area rea he proposed B		-34 to 3-36
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Calculate F	$A_{l} = A_{P} = A_{R} = A_{R$	Impervious area Pervious area TSS Load rem 2.76 0.88 1.88 916 tfall area 814 0.89 ge basin / outfall 1.60 0.27 4291 Calculations fr	a proposed in remaining in oved from the acres acres acres lbs. Ibs. Ibs. inches cubic feet	the BMP catchment a the BMP catchment a is catchment area by the Calculations from RG	area rea he proposed B		-34 to 3-36
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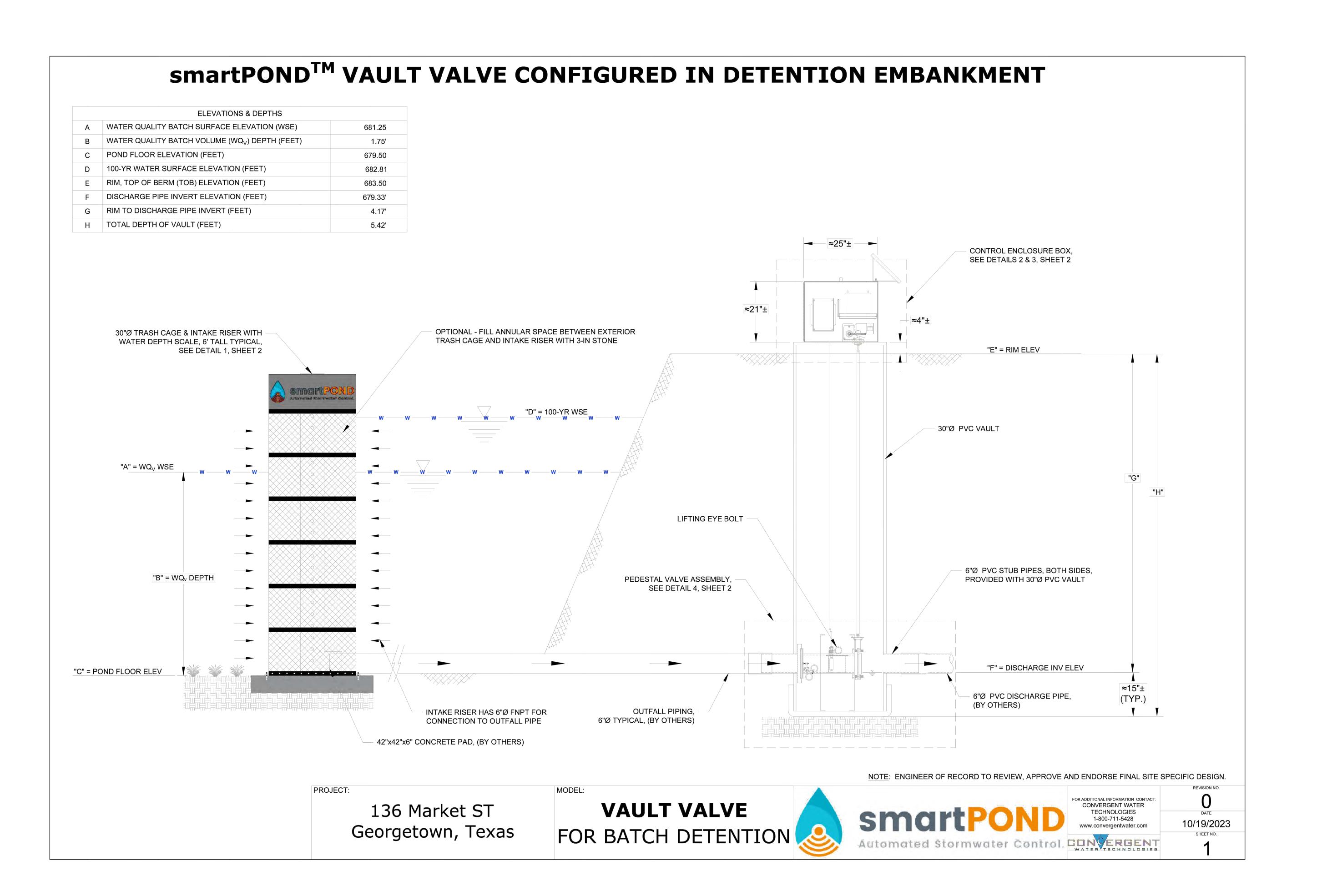




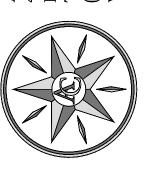
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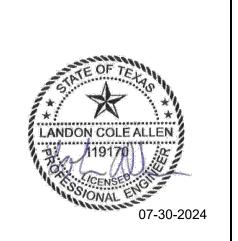
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AKRON CONSULTING, LLC. 431 N. CENTER ST. LONGVIEW, TX 75601 TBPE Firm Reg. # 14014 (O) 903-720-4822 www.akron-consulting.com





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WATER QUALITY DETAILS

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smartPOND VAULT VALVE SPECIFICATIONS

CONTINUOUSLY MONITORED AUTOMATED STORMWATER SYSTEM (C-MASS), WITH PROGRAM CONTROLLED VAULT VALVE

CONTINUOUSLY MONITORED AUTOMATED STORMWATER SYSTEM (C-MASS) DEVICE: THE CONTINUOUSLY MONITORED AUTOMATED STORMWATER SYSTEM (C-MASS), SHOWN ON THE PLANS AS THE VAULT ASSEMBLY SHALL BE A smartPONDTM VAULT VALVE PROVIDED BY:

CONVERGENT WATER TECHNOLOGIES 800.711.5428

WWW.CONVERGENTWATER.COM

THE smartPONDTM VAULT VALVE SHALL SHALL PROVIDE FOR ACTIVE MANAGEMENT OF DETAINED STORMWATER VOLUME AND / OR ITS ALLOWABLE DISCHARGE RATE. THE smartPONDTM VAULT VALVE SHALL BE PROGRAMMABLE TO DETAIN A SPECIFIED VOLUME OF STORMWATER FOR A SPECIFIED REQUIRED PERIOD OF TIME AND / OR PROGRAMMED TO CONTROL THE OUTFLOW RATE TO MATCH THE MAXIMUM ALLOWABLE DISCHARGE RATE OR BOTH OF THIS OPERATIONS SIMULTANEOUSLY. THE smartPOND™ VAULT VALVE MAXIMIZES THE DETENTION TO PROMOTE THE SETTLEMENT OF SOLIDS BEFORE AUTOMATICALLY DEWATERING THE DETENTION POND COMPLETELY FOR STORMWATER RETENTION SYSTEMS, THE SYSTEM SHALL BE PROGRAMMED TO MANAGE THE REQUIRED RETENTION VOLUME WHILE MAINTAINING A SPECIFIED AMOUNT OF CAPACITY FOR FLOOD STORAGE OR OTHER USE.

THE FOLLOWING SPECIFICATIONS DESCRIBE THE COMPONENTS, GENERAL FUNCTIONS, AND APPLICATIONS OF A CONTINUOUSLY MONITORED AUTOMATED STORMWATER SYSTEM (C-MASS), USING THE PROGRAMMED smartPONDTM VAULT VALVE.

THIS smartPONDTM VAULT VALVE SHALL FUNCTION AS AN ELECTRONICALLY CONTROLLED, SOLAR POWERED STORMWATER MANAGEMENT DEVICE, PROVIDING PRECISION STORMWATER VOLUME MANAGEMENT CAPABILITIES AND REAL-TIME DATA. USING SENSORS, SOLAR POWER, AN ELECTRONIC ACTUATOR, AND AN INTERNET-BASED CONTROL INTERFACE. THE smartPONDTM VAULT VALVE CONNECTS TO A SPECIALIZED PERFORATED INTAKE RISER INSIDE THE STORMWATER IMPOUNDMENT AREA TO ENABLE PRECISE CONTROL OF REQUIRED DETAINED OR RETAINED STORMWATER CONTROL VOLUMES AND ALLOWABLE DISCHARGE RATES AUTOMATICALLY OR IN REAL TIME. THE smartPONDTM ASSEMBLY CAN BE CONFIGURED ABOVE GROUND OR BELOW IN SMALL MANHOLE OR VAULT STRUCTURE.

- 1.1 PRE-PROGRAMMED VAULT VALVE CONTROL: THE VAULT VALVE SHALL BE PRE-PROGRAMMED TO EXECUTE COMMANDS BASED ON STORM EVENTS, REQUIRED CONTROL VOLUMES, ALLOWABLE DISCHARGE RATES. AND DETENTION TIME
 - 1.1.1 BATCH DETENTION FUNCTION FOR STORMWATER QUALITY: THE smartPONDTM VAULT VALVE MAY BE PROGRAMMED TO PROVIDE BATCH DETENTION TO ACHIEVE STORMWATER QUALITY EFFLUENT GOAL OF 80% OR MORE REMOVAL OF TOTAL SUSPENDED SOLID (TSS) REMOVAL BY HOLDING THE WATER QUALITY VOLUME (WQV) FOR SETTLEMENT TREATMENT, FOR A REQUIRED PERIOD OF TIME. HOLDING TIMES ARE TYPICALLY SET FORTH IN STORMWATER MANAGEMENT REGULATIONS AS 12, 24 OR
- 1.2 REAL-TIME MONITORING (OPTIONAL): THE smartPONDTM SHALL COME WITH TELEMETRY THAT SHALL ENABLE REAL-TIME REMOTE MONITORING & VALVE OPERATION CAPACITIES THROUGH A SECURE WEB-BASED USER INTERFACE. THIS INTERFACE ENABLES COMMANDS TO BE SENT TO THE VAULT VALVE TO CHANGE THE VALVES POSITION TO CONTROL DISCHARGE RATE AND POND DEPTH. THROUGH THIS SECURE WEB-BASED USER INTERFACE THE DETENTION POND'S STORAGE-STAGE AND DISCHARGE RATE CAN BE MONITORED IN REAL-TIME. THE SECURE WEB-BASED USER INTERFACE SHALL ALSO ENABLE A USER TO:
 - CONTROL THE VAULT VALVE, EITHER OPEN OR CLOSE.
 - DETERMINE THE WATER SURFACE ELEVATION (WSE) OR POND DEPTH.
 - DETERMINE IF TRASH OR DEBRIS IS SURROUNDING THE TRASH CAGE AND INTAKE RISER
 - RECEIVE MAINTENANCE ALERTS SUCH AS: LOW BATTERY, VAULT VALVE FAILURE, ETC.
 - MAINTAIN SPECIFIED WATER SURFACE LEVEL.

THIS SECURE WEB-BASED USER INTERFACE SHALL PROVIDE LIVE AND HISTORICAL DATA AND PROVIDE THE ALERTS LISTED IN SECTION 4. IT WILL ALSO ENABLE COMMANDS TO BE SENT TO THE VAULT VALVE TO CHANGE THE VALVES POSITION TO CONTROL DISCHARGE RATE AND POND DEPTH.

A COMPLETE SET OF INSTRUCTIONS FOR ACCESSING AND USING THIS SECURE WEB-BASED INTERFACE FOR LONG-TERM OPERATIONS SHALL BE PROVIDED IN THE CONSTRUCTION SUBMITTALS AND COPY OF THESE INSTRUCTION SHALL BE PLACED IN THE ENCLOSURE BOX.

- COMPONENTS: THE smartPONDTM VAULT VALVE MAY BE IMPLEMENTED EITHER ABOVE OR BELOW GROUND, AND IS COMPRISED OF THE FOLLOWING COMPONENTS:
 - 2.1 HARDWARE AND CONFIGURATION:

THE STANDARD smartPONDTM VAULT VALVE SYSTEM CONSISTS OF A LOWER AND UPPER COMPONENT: THE LOWER COMPONENT IS THE PEDESTAL VALVE ASSEMBLY WITH 6"Ø PIPE SPOOL AND 6"Ø ACTUATED VAULT VALVE AND PRESSURE TRANSDUCER HOUSING. THIS LOWER PEDESTAL SHALL HAVE A QUICK DISCONNECT SYSTEM ENABLING THE PEDESTAL VALVE ASSEMBLY TO BE DISCONNECTED FROM THE SURFACE AND HOISTED UP USING THE LIFTING EYE-BOLT ON TOP OF THE PEDESTAL VALVE ASSEMBLY.

THE SECOND, UPPER COMPONENT IS THE LOCKABLE STEEL WEATHERPROOF ENCLOSURE BOX WITH A SOLAR PANEL AND ALERT LIGHT MOUNTED ON ITS TOP. THIS ENCLOSURE BOX HOUSES THE PROGRAMMABLE CONTROLLER INSIDE A NEMA-3R BOX, BATTERY, ELECTRIC MOTOR. ACTUATOR GEARING AND AN EXTENDABLE NON-RISING VALVE STEM BETWEEN THE ACTUATOR AND THE 6"Ø VAULT VALVE.

THE ENCLOSURE BOX SHALL BE BOLTED TO THE TOP OF THE VAULT WITH $\frac{1}{2}$ "Ø" STAINLESS STEEL (SS) BOLT, NUTS AND WASHERS. USE $\frac{1}{2}$ "Ø, 3.5" LONG STAINLESS STEEL (SS) WEDGE ANCHORS IF VAULT'S TOP IS A CONCRETE PAD.

THIS ENCLOSURE BOX MAY BE INSTALLED WITHIN THE UNDERGROUND STRUCTURE AS LONG AS ACCESS TO THE ENTIRE VAULT ASSEMBLY IS ENSURED WITH A PROPERLY SIZED STRUCTURE. IN SUCH AN UNDERGROUND DEPLOYMENT CONFIGURATION, THE ENCLOSURE BOX SHOULD BE MOUNTED ABOVE THE MAXIMUM WATER SURFACE ELEVATION (WSE), OF THE DETENTION/DRAINAGE SYSTEM ION. THIS DEPLOYMENT CONFIGURATION STILL REQUIRES THE SOLAR PANEL TO BE LOCATED ABOVE GROUND.

THE LOWER PEDESTAL VALVE ASSEMBLY IS INSTALLED IN A MANHOLE OR VAULT AS NEEDED. AN EXTENDED NON-RISING VALVE STEM. AKA: "DRIVE SHAFT" CONNECTS THE UNDERGROUND VAULT VALVE TO THE ACTUATOR IN THE ABOVE GROUND ENCLOSURE BOX.

THE OUTFALL PIPE FROM THE DETENTION SYSTEM CONNECTS TO THE 6"Ø PVC INLET STUB PVC VAULT.

2.2 OTHER ELECTRONICS SPECIFICATIONS:

- MOTOR OPERATES ON 12-VOLTS AND HAS TWO WIRES CONNECTING TO THE MOTOR CONTROLLER BOARD.
- BATTERY THIS IS A GEL BATTERY THAT PROVIDES 12-VOLTS, 30 AMP/HOUR OF POWER TO THE VAULT VALVE ASSEMBLY.
- SOLAR PANEL PROVIDES 15-WATT CHARGING TO THE 12-VOLT GEL BATTERY.
- SOLAR CHARGE CONTROLLER REGULATES THE VOLTAGE AND CURRENT DELIVERED TO THE GEL BATTERY

SENSORS:

- PRESSURE TRANSDUCER A SENSOR CAPABLE OF STAYING SUBMERSED IN WATER INDEFINITELY AND IS MOUNTED IN CENTER PIPE SPOOL OF THE LOWER PEDESTAL COMPONENT
- VAULT VALVE POSITION SENSOR DETERMINES THE POSITION OF THE OUTFALL VALVE.

OPTIONAL SENSORS & HARDWARE:

- CELL DATA MODEM REQUIRED FOR REAL TIME CONTROL AND ALERTS.
- HYDROCARBON SENSOR THIS OPTIONAL SENSOR MAY BE FITTED TO THE smartPONDTM VAULT VALVE TO PERFORM SPECIFIC FUNCTIONS BASED ON THE PRESENCE OF HYDROCARBON CONTAMINATION.

ADDITIONAL COMPONENTS LIST:

- INTAKE RISER: THIS SHALL BE A PERFORATED STEEL RISER CONNECTED TO THE 6"Ø VAULT PIPE WITHIN THE POND AREA. THIS INTAKE RISER SHALL BE AN 8" SQUARE STEEL WITH FOUR (4X) 1"Ø HOLES AT 90-DEGREES EACH, EVERY 4 VERTICAL INCHES. THE DISCHARGE OF THIS INTAKE TUBING SHALL HAVE FEMALE NATIONAL PIPE THREADS (FNPT) TO MATCH THE 6"Ø SCHEDULE 40 PVC
- 3.2 TRASH CAGE: THE TRASH CAGE ATTACHES TO THE PERFORATED RISER WITH A COUPLING AND CALDER PIN PROVIDED WITH THE THE SYSTEM. THE TRASH CAGE SHALL BE COMPRISED OF STEEL BANDING AND A 1.5" X 1.5" MESH TO PREVENT FLOATABLE'S AND OTHER CONTAMINANTS FROM ENTERING AND CLOGGING THE PERFORATED RISER. THE TRASH CAGE WILL SIT 0.5" ABOVE THE BOTTOM OF THE IMPOUNDMENT TO ALLOW THE LAST 0.5" OUT OF THE IMPOUNDMENT
- 3.3 VAULT VALVE STEM EXTENSION: THE NON-RISING STEM, AKA: "DRIVE SHAFT" OF THE smartPONDTM SYSTEM MAY BE EXTENDED TO ANY LENGTH NECESSARY FOR DEPLOYMENT CONFIGURATIONS INSTANCES WHERE THE VAULT VALVE WILL BE IN AN UNDERGROUND VAULT OR MANHOLE. THE VAULT VALVE STEM WILL CONNECT THE VAULT VALVE TO THE ABOVE GROUND CONTROLS.
- ALERTS: THE smartPOND™ VAULT VALVE WILL INDICATE THE FOLLOWING ALERTS BY ILLUMINATING AN EXTERIORLY VISIBLE RED LIGHT ON TOP OF THE ENCLOSURE BOX:
 - LOW BATTERY
- LOSS OF FUNCTION
- VAULT VALVE MALFUNCTION
- HYDROCARBON CONTAMINATION (OPTIONAL)
- MAINTENANCE & OPERATION SUBMITTAL: AN OPERATION AND MAINTENANCE MANUAL SHALL BE PROVIDED, REVIEWED AND APPROVED DURING THE CONSTRUCTION SUBMITTAL PROCESS AND SHALL INCLUDE AT A MINIMUM: GREASING AND LUBRICATION ITEMS AND CYCLE FOR THE ACTUATOR, MOTOR AND VALVE: INSPECTION AND MAINTENANCE OF THE SOLAR PANEL, GEL BATTERY TRASH CAGE AND INTAKE RISER; AND PROCEDURES FOR VALVE OPERATION IN CASE OF TOTAL ELECTRONIC OR MOTOR FAILURE.
- SHIPPING AND HANDLING STORAGE: THE smartPONDTM VAULT VALVE IS SHIPPED IN A NEAR-FULLY ASSEMBLED CONFIGURATION AND SHOULD BE STORED LIKEWISE. THE SYSTEMS ARE TRANSPORTED AND STORED ON PALLETS AND MUST REMAIN SECURED VIA STRAPS OR STEEL BANDS TO SAID PALLET AT ALL TIMES. THE SOLAR PANEL IS NOT INSTALLED AT TIMES OF TRANSPORT OR STORAGE AND SHOULD NOT BE INSTALLED UNTIL THE UNIT IS READY TO BEGIN OPERATION. THE BATTERY MAY BE STORED INSIDE THE ELECTRONICS BOX AND IF REMOVED. SHOULD NEVER BE STORED ON A CONCRETE SURFACE.
- INSTALLATION: INSTALL THE smartPONDTM VAULT ASSEMBLY FIRST WITHOUT THE SOLAR PANEL. MOUNT SOLAR PANEL WITH THE CONNECTION BOLTS PROVIDED AFTER THE ASSEMBLY IS ANCHORED TO THE CONCRETE PAD USING THE ANCHOR BOLTS CALLED OUT ON THE PLANS. AS . BOLTS SHOULD BE REMOVED DURING THE INSTALLATION PROCESS. THERE ARE SEVERAL WAYS TO INSTALL THE smartPONDTM VAULT VALVE WITH THE KEY BEING STRUCTURED SUPPORT.
- 8.1 BELOW GROUND INSTALLATIONS: THE UPPER COMPONENT CONSISTING OF THE ENCLOSURE BOX AND ALL ITS INTERNALS SHOULD BE FASTENED TO THE VAULT TOP OR TO THE SURFACE OF A CONCRETE PAD POURED OVER THE VAULT TOP. FOR VAULT INSTALLATIONS, SEE DESIGN DETAILS FOR STANDARD VAULT DESIGN.

9. SAFETY INFORMATION AND WARNINGS:

- ALWAYS KEEP HANDS CLEAR OF THE VAULT VALVE AND MOTOR WHEN UNIT IS IN OPERATION.
- TURN THE POWER SWITCH OFF WHEN DOING ANY ELECTRICAL WORK.
- DO NOT ENTER THE WATER WHEN THE DEVICE IS ACTIVELY DRAINING WATER.
- ALWAYS USE PROPER PERSONAL PROTECTION EQUIPMENT (PPE), AND CONFINED SPACE PROTOCOL WHEN SERVICING A VAULT VALVE BENEATH GROUND.
- PRODUCTS: THE MANUFACTURER SHALL BE AN ESTABLISHED STORMWATER COMPANY THAT HAS AT LEAST FIVE (5X) INSTALLATIONS OF C-MASS DEVICES THAT HAVE BEEN IN USE AND FUNCTIONAL FOR FIVE (5X) OR MORE YEARS.
- 11. QUALITY ASSURANCE AND PERFORMANCE SPECIFICATIONS: THE QUALITY OF ALL SYSTEM COMPONENTS AND ALL OTHER APPURTENANCES AND THEIR ASSEMBLY PROCESS SHALL BE SUBJECT TO INSPECTION UPON DELIVERY OF THE SYSTEM TO THE WORK SITE. INSTALLATION IS TO BE PERFORMED ONLY BY SKILLED WORK PEOPLE WITH SATISFACTORY RECORD OF PERFORMANCE ON EARTHWORKS, PIPE, WELDING, CHAMBER, OR POND/LANDFILL CONSTRUCTION PROJECTS OF COMPARABLE SIZE AND QUALITY.





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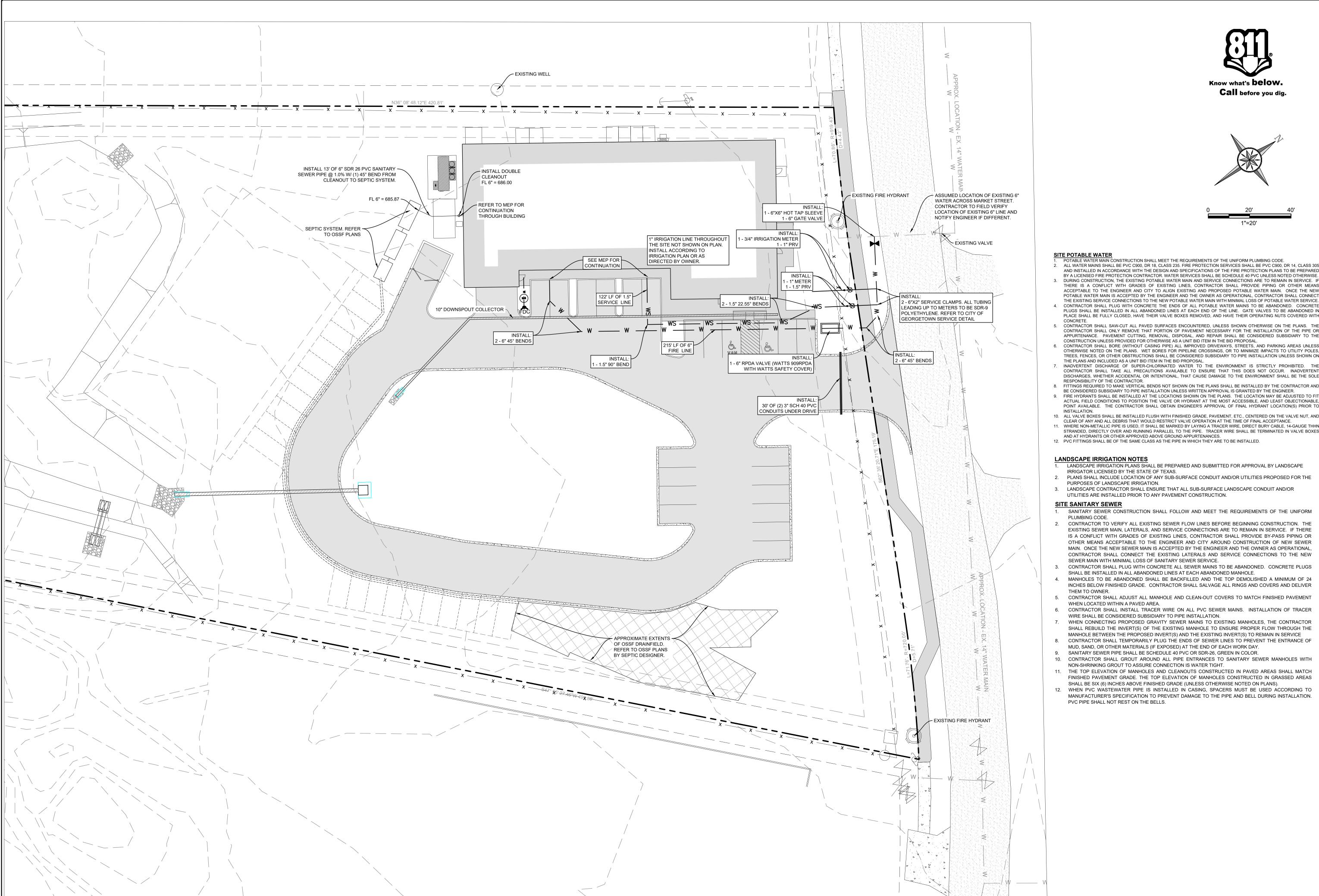
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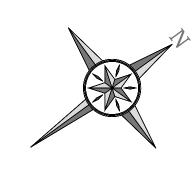




TABLE WATER MAIN CONSTRUCTION SHALL MEET THE REQUIREMENTS OF THE UNIFORM PLUMBING CODE. ALL WATER MAINS SHALL BE PVC C900, DR 18, CLASS 235. FIRE PROTECTION SERVICES SHALL BE PVC C900, DR 14, CLASS 305

- AND INSTALLED IN ACCORDANCE WITH THE DESIGN AND SPECIFICATIONS OF THE FIRE PROTECTION PLANS TO BE PREPARED BY A LICENSED FIRE PROTECTION CONTRACTOR. WATER SERVICES SHALL BE SCHEDULE 40 PVC UNLESS NOTED OTHERWISE DURING CONSTRUCTION. THE EXISTING POTABLE WATER MAIN AND SERVICE CONNECTIONS ARE TO REMAIN IN SERVICE. IF THERE IS A CONFLICT WITH GRADES OF EXISTING LINES, CONTRACTOR SHALL PROVIDE PIPING OR OTHER MEANS ACCEPTABLE TO THE ENGINEER AND CITY TO ALIGN EXISTING AND PROPOSED POTABLE WATER MAIN. ONCE THE NEW POTABLE WATER MAIN IS ACCEPTED BY THE ENGINEER AND THE OWNER AS OPERATIONAL. CONTRACTOR SHALL CONNECT
- THE EXISTING SERVICE CONNECTIONS TO THE NEW POTABLE WATER MAIN WITH MINIMAL LOSS OF POTABLE WATER SERVICE. CONTRACTOR SHALL PLUG WITH CONCRETE THE ENDS OF ALL POTABLE WATER MAINS TO BE ABANDONED. CONCRETE PLUGS SHALL BE INSTALLED IN ALL ABANDONED LINES AT EACH END OF THE LINE. GATE VALVES TO BE ABANDONED IN PLACE SHALL BE FULLY CLOSED, HAVE THEIR VALVE BOXES REMOVED, AND HAVE THEIR OPERATING NUTS COVERED WITH
- CONTRACTOR SHALL ONLY REMOVE THAT PORTION OF PAVEMENT NECESSARY FOR THE INSTALLATION OF THE PIPE OR APPURTENANCE. PAVEMENT CUTTING, REMOVAL, DISPOSAL, AND REPAIR SHALL BE CONSIDERED SUBSIDIARY TO THE CONSTRUCTION UNLESS PROVIDED FOR OTHERWISE AS A UNIT BID ITEM IN THE BID PROPOSAL. CONTRACTOR SHALL BORE (WITHOUT CASING PIPE) ALL IMPROVED DRIVEWAYS, STREETS, AND PARKING AREAS UNLESS
- OTHERWISE NOTED ON THE PLANS. WET BORES FOR PIPELINE CROSSINGS, OR TO MINIMIZE IMPACTS TO UTILITY POLES, TREES, FENCES, OR OTHER OBSTRUCTIONS SHALL BE CONSIDERED SUBSIDIARY TO PIPE INSTALLATION UNLESS SHOWN ON THE PLANS AND INCLUDED AS A UNIT BID ITEM IN THE BID PROPOSAL.
- INADVERTENT DISCHARGE OF SUPER-CHLORINATED WATER TO THE ENVIRONMENT IS STRICTLY PROHIBITED. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS AVAILABLE TO ENSURE THAT THIS DOES NOT OCCUR. INADVERTENT DISCHARGES, WHETHER ACCIDENTAL OR INTENTIONAL, THAT CAUSE DAMAGE TO THE ENVIRONMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- FITTINGS REQUIRED TO MAKE VERTICAL BENDS NOT SHOWN ON THE PLANS SHALL BE INSTALLED BY THE CONTRACTOR AN BE CONSIDERED SUBSIDIARY TO PIPE INSTALLATION UNLESS WRITTEN APPROVAL IS GRANTED BY THE ENGINEER. 9. FIRE HYDRANTS SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLANS. THE LOCATION MAY BE ADJUSTED TO FIT ACTUAL FIELD CONDITIONS TO POSITION THE VALVE OR HYDRANT AT THE MOST ACCESSIBLE, AND LEAST OBJECTIONABLE, POINT AVAILABLE. THE CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL OF FINAL HYDRANT LOCATION(S) PRIOR TO
- 10. ALL VALVE BOXES SHALL BE INSTALLED FLUSH WITH FINISHED GRADE, PAVEMENT, ETC., CENTERED ON THE VALVE NUT, AND CLEAR OF ANY AND ALL DEBRIS THAT WOULD RESTRICT VALVE OPERATION AT THE TIME OF FINAL ACCEPTANCE. 11. WHERE NON-METALLIC PIPE IS USED, IT SHALL BE MARKED BY LAYING A TRACER WIRE, DIRECT BURY CABLE, 14-GAUGE THHN STRANDED, DIRECTLY OVER AND RUNNING PARALLEL TO THE PIPE. TRACER WIRE SHALL BE TERMINATED IN VALVE BOXES
- AND AT HYDRANTS OR OTHER APPROVED ABOVE GROUND APPURTENANCES. 12. PVC FITTINGS SHALL BE OF THE SAME CLASS AS THE PIPE IN WHICH THEY ARE TO BE INSTALLED.

LANDSCAPE IRRIGATION NOTES

LANDSCAPE IRRIGATION PLANS SHALL BE PREPARED AND SUBMITTED FOR APPROVAL BY LANDSCAPE IRRIGATOR LICENSED BY THE STATE OF TEXAS.

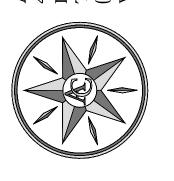
- PLANS SHALL INCLUDE LOCATION OF ANY SUB-SURFACE CONDUIT AND/OR UTILITIES PROPOSED FOR THE PURPOSES OF LANDSCAPE IRRIGATION.
- 3. LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL SUB-SURFACE LANDSCAPE CONDUIT AND/OR UTILITIES ARE INSTALLED PRIOR TO ANY PAVEMENT CONSTRUCTION.

SITE SANITARY SEWER

PVC PIPE SHALL NOT REST ON THE BELLS.

SANITARY SEWER CONSTRUCTION SHALL FOLLOW AND MEET THE REQUIREMENTS OF THE UNIFORM PLUMBING CODE.

- CONTRACTOR TO VERIFY ALL EXISTING SEWER FLOW LINES BEFORE BEGINNING CONSTRUCTION. THE EXISTING SEWER MAIN, LATERALS, AND SERVICE CONNECTIONS ARE TO REMAIN IN SERVICE. IF THERE IS A CONFLICT WITH GRADES OF EXISTING LINES, CONTRACTOR SHALL PROVIDE BY-PASS PIPING OR OTHER MEANS ACCEPTABLE TO THE ENGINEER AND CITY AROUND CONSTRUCTION OF NEW SEWER MAIN. ONCE THE NEW SEWER MAIN IS ACCEPTED BY THE ENGINEER AND THE OWNER AS OPERATIONAL, CONTRACTOR SHALL CONNECT THE EXISTING LATERALS AND SERVICE CONNECTIONS TO THE NEW SEWER MAIN WITH MINIMAL LOSS OF SANITARY SEWER SERVICE.
- CONTRACTOR SHALL PLUG WITH CONCRETE ALL SEWER MAINS TO BE ABANDONED. CONCRETE PLUGS SHALL BE INSTALLED IN ALL ABANDONED LINES AT EACH ABANDONED MANHOLE.
- MANHOLES TO BE ABANDONED SHALL BE BACKFILLED AND THE TOP DEMOLISHED A MINIMUM OF 24 INCHES BELOW FINISHED GRADE. CONTRACTOR SHALL SALVAGE ALL RINGS AND COVERS AND DELIVER THEM TO OWNER.
- CONTRACTOR SHALL ADJUST ALL MANHOLE AND CLEAN-OUT COVERS TO MATCH FINISHED PAVEMENT WHEN LOCATED WITHIN A PAVED AREA.
- 6. CONTRACTOR SHALL INSTALL TRACER WIRE ON ALL PVC SEWER MAINS. INSTALLATION OF TRACER WIRE SHALL BE CONSIDERED SUBSIDIARY TO PIPE INSTALLATION.
- WHEN CONNECTING PROPOSED GRAVITY SEWER MAINS TO EXISTING MANHOLES, THE CONTRACTOR SHALL REBUILD THE INVERT(S) OF THE EXISTING MANHOLE TO ENSURE PROPER FLOW THROUGH THE MANHOLE BETWEEN THE PROPOSED INVERT(S) AND THE EXISTING INVERT(S) TO REMAIN IN SERVICE
- 8. CONTRACTOR SHALL TEMPORARILY PLUG THE ENDS OF SEWER LINES TO PREVENT THE ENTRANCE OF MUD, SAND, OR OTHER MATERIALS (IF EXPOSED) AT THE END OF EACH WORK DAY. 9. SANITARY SEWER PIPE SHALL BE SCHEDULE 40 PVC OR SDR-26, GREEN IN COLOR.
- 10. CONTRACTOR SHALL GROUT AROUND ALL PIPE ENTRANCES TO SANITARY SEWER MANHOLES WITH NON-SHRINKING GROUT TO ASSURE CONNECTION IS WATER TIGHT. 11. THE TOP ELEVATION OF MANHOLES AND CLEANOUTS CONSTRUCTED IN PAVED AREAS SHALL MATCH
- FINISHED PAVEMENT GRADE. THE TOP ELEVATION OF MANHOLES CONSTRUCTED IN GRASSED AREAS SHALL BE SIX (6) INCHES ABOVE FINISHED GRADE (UNLESS OTHERWISE NOTED ON PLANS). WHEN PVC WASTEWATER PIPE IS INSTALLED IN CASING, SPACERS MUST BE USED ACCORDING TO MANUFACTURER'S SPECIFICATION TO PREVENT DAMAGE TO THE PIPE AND BELL DURING INSTALLATION.



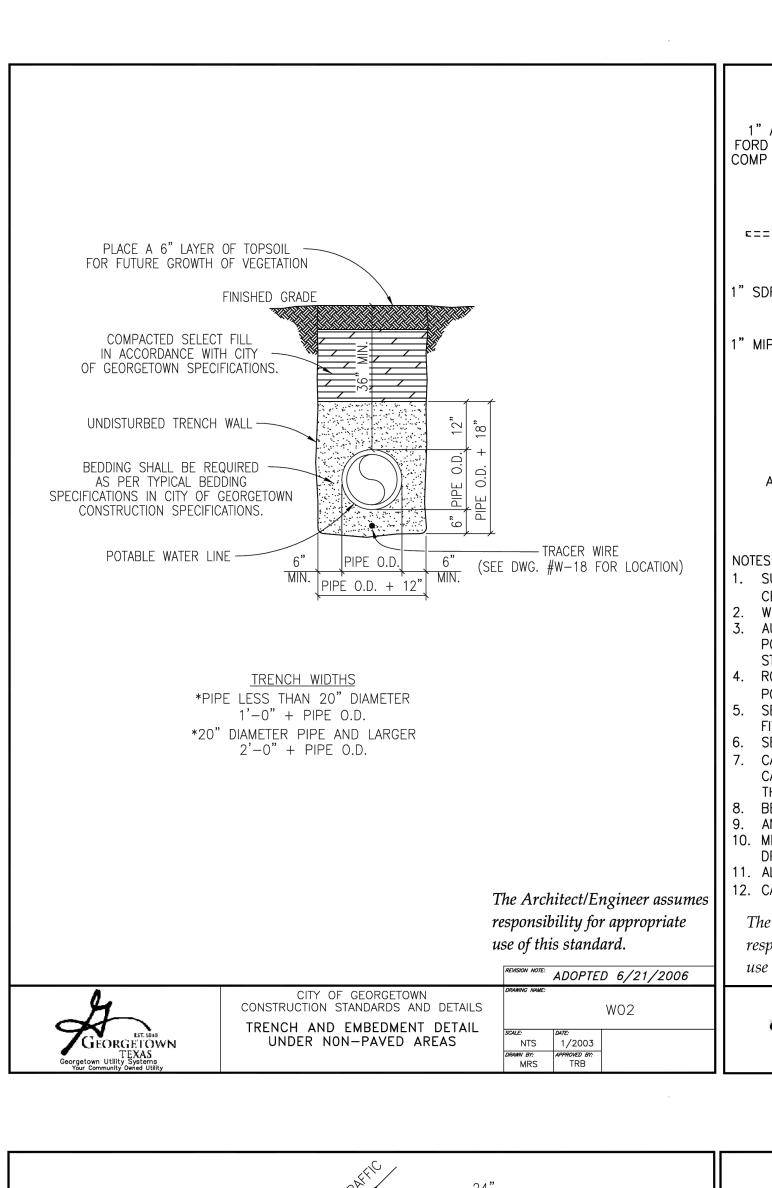


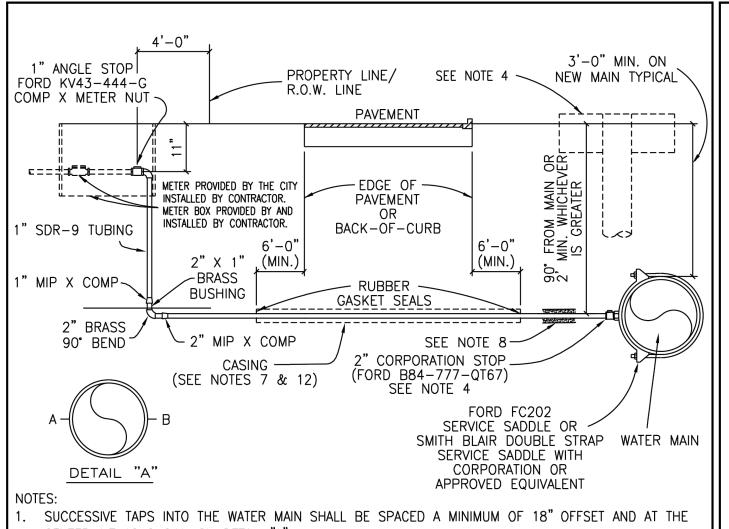
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APPROVED BY: DATE: 7/30/2024 DWG NAME: C6.0 UTILITY PLAN.DWG JOB NO:

C6.0





CENTERLINE AS SHOWN ON DETAIL "A". WHERE NO SIDEWALK EXISTS, METER BOXES SHALL BE SET TO CONFORM TO FINISHED GRADE. AUTHORIZED SERVICE LINE MATERIAL:

POLYETHYLENE TUBING SHALL BE SDR-9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL ROTATE THE CORPORATION STOP SO THAT THE OPERATING NUT IS ACTUATED FROM THE VERTICAL POSITION RATHER THAN THE HORIZONTAL. SEE STD. RISER FOR CORP. STOP DETAIL, (DWG # WO8).

SERVICE LINES SHALL BE CONTINUOUS FROM CORPORATION STOP TO CORPORATION STOP WITH NO FITTINGS IN BETWEEN. SERVICE CASING SHALL NOT BE INSTALLED BY WATER JETTING UNDER ROADWAY.

CASING REQUIRED FOR ALL PAVEMENT CROSSINGS. 4" SDR-26 REQUIRED FOR OPEN-CUT. STEEL CASING PIPE REQUIRED FOR JACK AND BORE. LIMITS OF CASING SHOULD EXTEND SIX FEET BEYOND THE EDGE OF PAVEMENT OR BACK-OF-CURB BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS.

ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER. 10. METER BOX TO BE CAPABLE OF HOUSING ITRON AUTOMATIC METER READING DEVICE. USE DFW-PLASTICS, INC. PART NO. 1200.SBAMR OR APPROVED EQUAL.

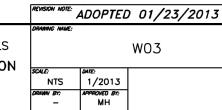
11. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY. SEE DETAIL W23.

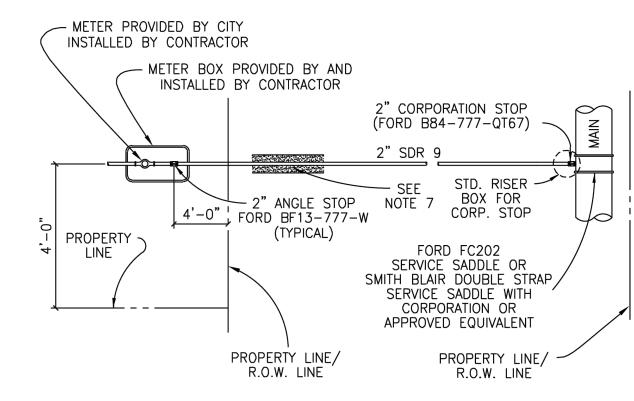
12. CASING SHALL EXTEND OUT TO WITHIN 4' INSIDE OF THE R.O.W. LINE, ON BOTH SIDES.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

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CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TYPICAL WATER SERVICE-ELEVATION





AUTHORIZED SERVICE LINE MATERIAL:

POLYETHYLENE TUBING SHALL BE SDR-9. CLASS 200, SDR TUBING SHALL HAVE STAINLESS STEEL STIFFENERS.

ANGLE STOP SHALL BE 1" MINIMUM.

1" ANGLE STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND

SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS. ANGLE STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.

ANGLE STOPS SHALL BE INSTALLED 8" BELOW FINISHED GRADE AND MARKED WITH A 2" X 2" X 48" TREATED WOOD STAKE, PAINTED BLUE.

BEDDING MATERIAL AS PER CITY OF GEORGETOWN CONSTRUCTION SPECIFICATIONS. 8. CASING REQUIREMENTS FOR SERVICE LINES CROSSING ROADWAYS SEE DETAIL W-03 NOTE

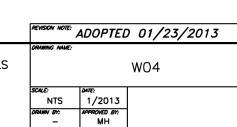
9. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.

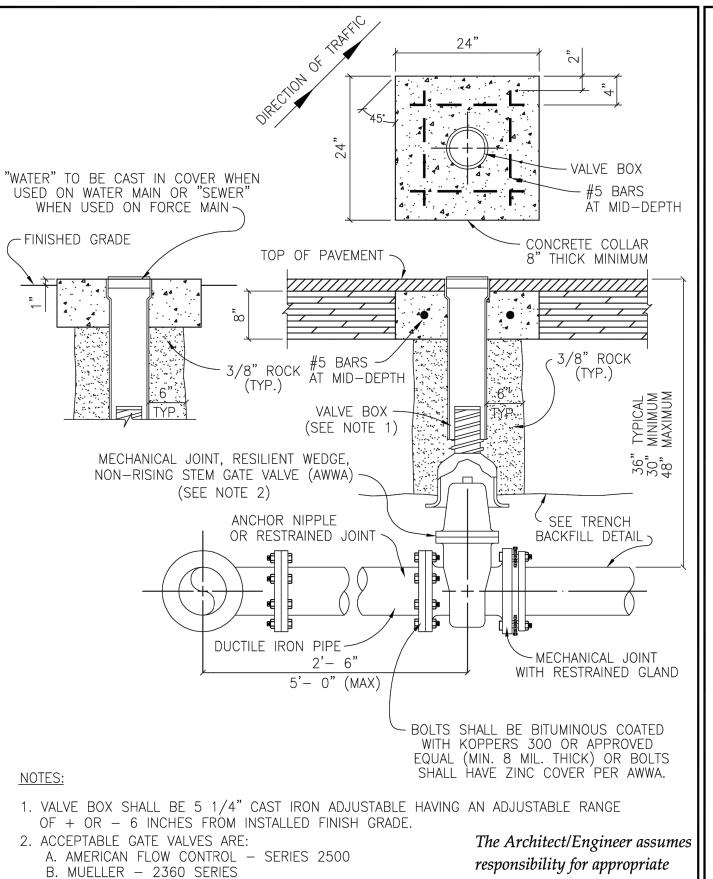
10. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

The Architect/Engineer assumes responsibility for appropriate

use of this standard.

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS GEORGETOWN SINGLE WATER SERVICE PLAN



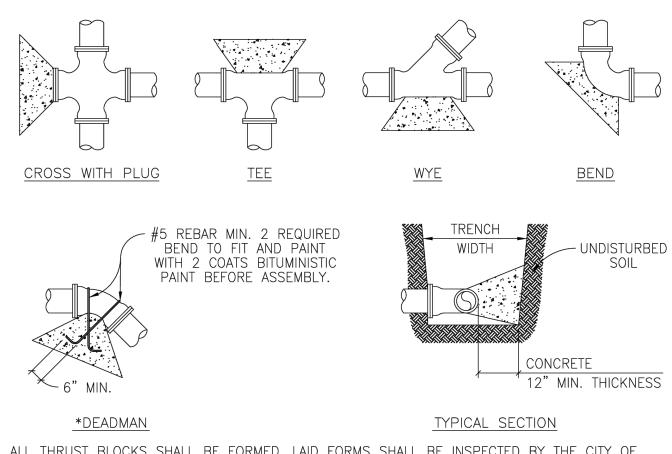


CITY OF GEORGETOWN

CONSTRUCTION STANDARDS AND DETAILS

TYPICAL VALVE SETTING

C. CLOW



ALL THRUST BLOCKS SHALL BE FORMED. LAID FORMS SHALL BE INSPECTED BY THE CITY OF GEORGETOWN PRIOR TO THE POURING OF CONCRETE AND SHALL ALSO BE INSPECTED BY THE CITY GEORGETOWN PRIOR TO COVERING. TYPICAL LOCATIONS WHICH REQUIRE CONCRETE REACTION THRUST) BLOCKS, FOR PRESSURE MAINS FOUR INCHES (4") AND GREATER. CONCRETE SHALL HAVE 2,500 P.S.I. MINIMUM STRENGTH AT TWENTY EIGHT (28) DAYS AND BEAR AGAINST UNDISTURBED STABLE SOILS, AREA OF CONTACT SHALL BE GOVERNED BY PIPE SIZE, MAXIMUM PRESSURE IN PIPE, AND BEARING CAPACITY OF SOIL. PROTECT FITTINGS, BOLTS, ETC. BY COVERING WITH VISQUEEN OR OTHER ACCEPTABLE MATERIAL. CONCRETE SHALL BE A MINIMUM OF TWELVE INCHES (12") THICK.

I _					
	PIPE	THRUST BLOCK		THRUST BLOCK	REMARKS
	SIZE	AREA REQUIRED	SIZE	AREA REQUIRED	
	4"	2.0 SQ. FT.	18"	30.0 SQ. FT.	
	6"	4.0 SQ. FT.	20"	37.0 SQ. FT.	VALUES ARE FOR 90° BENDS, BASED ON
	8"	6.6 SQ. FT.	24"	53.0 SQ. FT.	2000 P.S.F. SAFE BEARING LOAD AND PIPE PRESSURE OF 150 P.S.I. PLUS 33% SAFETY
	10"	10.0 SQ. FT.	27"	80.0 SQ. FT.	FACTOR FOR OTHER SOILS AND PRESSURES,
_	12"	14.0 SQ. FT.	30"	98.0 SQ. FT.	THE AREA REQUIRED IS IN DIRECT
	14"	18.0 SQ. FT.	36"	127.0 SQ. FT.	PROPORTION.
	16"	24.0 SQ. FT.			
*	THE	ENGINEER OF RECO	ORD SH	ALL CALCULATE THE	E SIZE OF THE DEADMAN REQUIRED AS WELL AS

ANY INSTALLATION WHICH IS NOT COVERED BY THE ABOVE.

The Architect/Engineer assumes responsibility for appropriate use of this standard.

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use of this standard.

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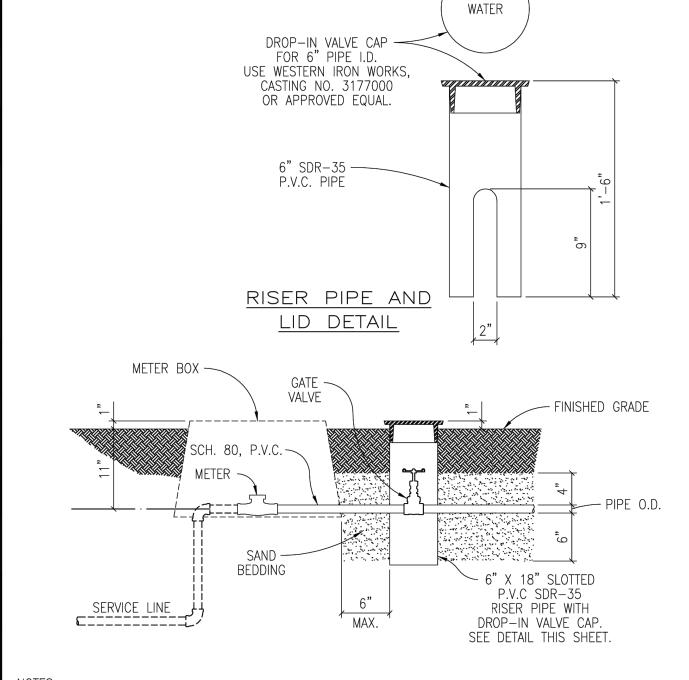
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REVISION NOTE: ADOPTED 6/21/2006

CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS TYPICAL THRUST BLOCKS FOR WATER AND FORCE MAIN

REVISION NOTE: ADOPTED 6/21/2006 1/2003 DRAWN BY: APPROVED BY:

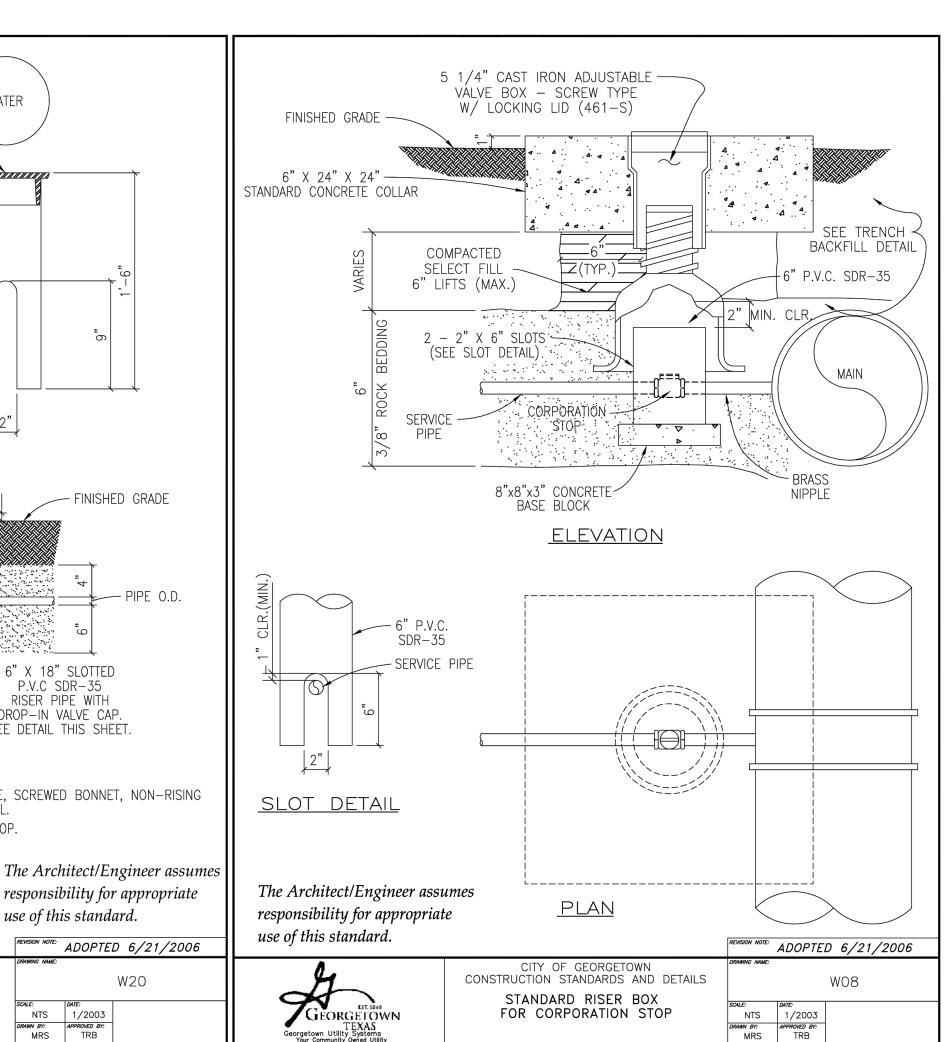
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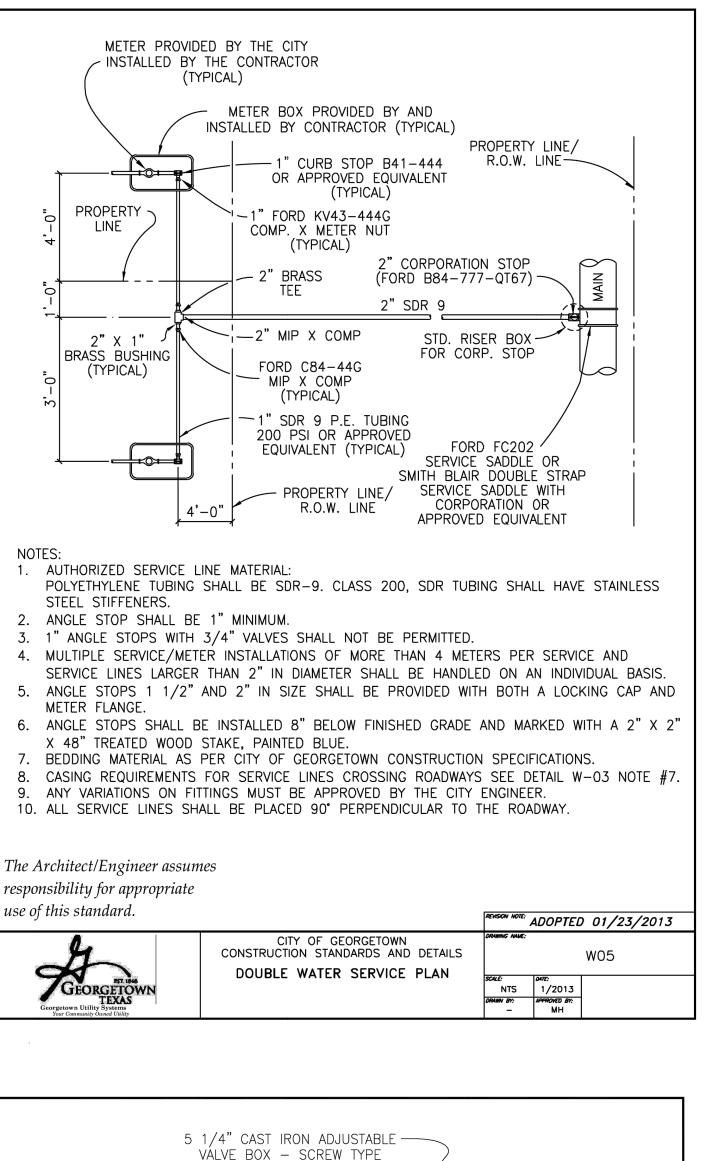


1. GATE VALVE SHALL BE A HAMMOND IB645, CLASS 125, BRONZE GATE, SCREWED BONNET, NON-RISING STEM, SOLID WEDGE DISC WITH THREADED ENDS OR APPROVED EQUAL. 2. DROP-IN VALVE CAP SHALL BE CAST WITH THE WORD "WATER" ON TOP.

3. USE SCHEDULE 80, M.I.P. ADAPTER AS REQUIRED.

responsibility for appropriate use of this standard. REVISION NOTE: ADOPTED 6/21/2006 CITY OF GEORGETOWN CONSTRUCTION STANDARDS AND DETAILS CUSTOMER'S CUT-OFF Georgetöwn NTS 1/2003 DRAWN BY: APPROVED BY:





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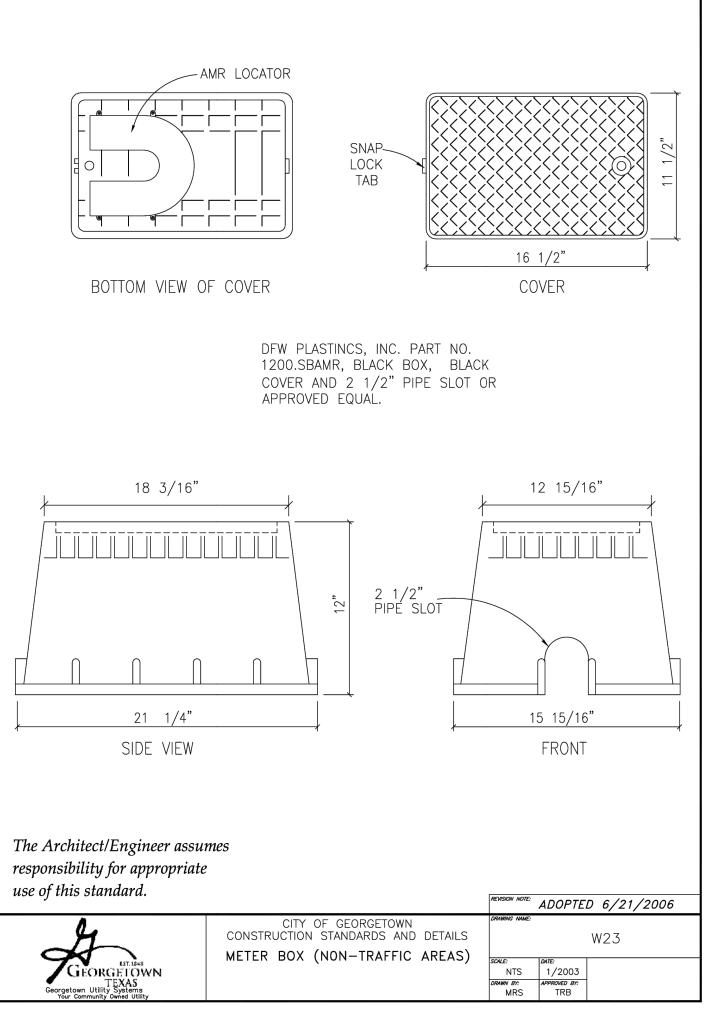
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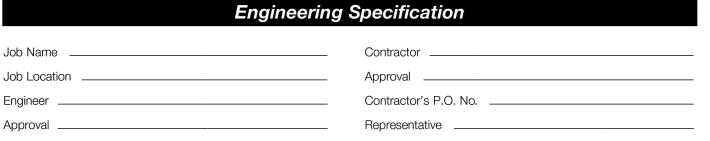
DATE NO. REVISION

DRAWN BY: APPROVED BY: DATE: 7/30/2024 DWG NAME: C6.0 UTILITY PLAN.DWG JOB NO:

FIRE DEPARTMENT CONNECTION

NOT TO SCALE





Series 909RPDA

Reduced Pressure Detector Assembly 21/2" - 10"

Series 909RPDA Reduced Pressure assembly is used in health hazard application and designed designed exclusively for use in accordance with water utility authority containment requirements. It is mandatory to prevent the reverse flow of fire protection system substances, such as glycerin wetting agents, stagnant water, and water of non-potable quality from being pumped or siphoned into the potable water line.

The modular check design concept facilitates maintenance and assembly access. And the ArmorTek® coating can resist corrosion due to microbial induced corrosion (MIC) or exposed metal substrate. All sizes are standardly equipped with AWWA epoxy coated, UL Classified and FM Approved OSY resilient seated gate valves, CFM (cubic feet per minute) or GPM (gallon per minute) meter and ball type test cocks. A pressure differential relief valve is located in a zone between the check valves. The series includes a flood sensor to detect excessive water discharges from the relief valve. The sensor is installed on the assembly exterior and does not alter assembly functions or certifications. The sensor relays a signal that triggers notification to facility personnel for corrective action, thus limiting flooding

NOTICE

and costly damage.

An add-on connection kit (sold separately) is required to activate the flood sensor. Without the connection kit, the sensor is a passive component that has no communication with any other device. (For more information download RP/IS-909/909RPDA.)

Use of the flood sensor does not replace the need to comply with all required instructions, codes, and regulations related to installation, operation, and maintenance of this product, including the • ArmorTek coating technology to resist corrosion of internals need to provide proper drainage in the event of a discharge.

Watts is not responsible for the failure of alerts due to connectivity issues, power outages, or improper installation.

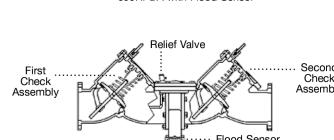
NOTICE The information contained herein is not intended to replace the full

product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

Inquire with governing authorities for local installation requirements.

ES-909RPDA

909RPDA with Flood Sensor



Features

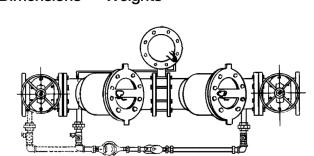
- Body construction fused epoxy coated cast iron
- Replaceable stainless steel seats Maximum flow at low pressure drop
- Compact for economy combined with performance
- Design simplicity for easy maintenance
- Furnished with 5%" x 3/4" (16 x 19mm) meter Air-in/Water-out relief valve design provides maximum capacity
- during emergency conditions.
- No special tools required
- Sensor on relief valve for flood detection

 Flood alerts feature activated with add-on sensor connection kit, compatible with BMS and cellular network communication

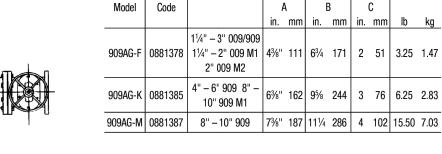
Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

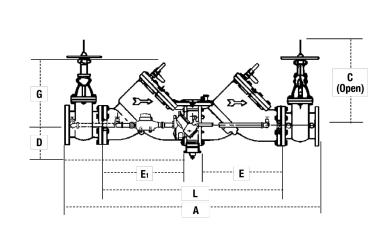


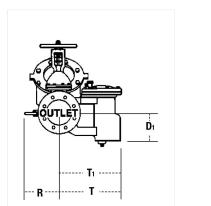
Dimensions - Weights



NOTE: Piping for 3" 909 will start from #1 gate valve and connect at #2 check valve.







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in.	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb	kg
21/2	411/4	1070	16%	416	51/4	133	41/4	114	12	305	7	178	261//8	664	14	356	9	229	75//8	194	230	104
3	421/4	1070	18%	479	51/4	133	41/4	114	12	305	7	178	261/8	664	14	356	9	229	7%	194	230	104
4	551//8	1400	223/4	578	6	152	57//8	149	17	432	91/2	241	37	940	15	381	135//	346	113/4	299	470	213
6	65½	1664	301//8	765	6	152	6	152	20¾	527	14½	368	45	1130	16	406	13%	346	113/4	299	798	362
8	78½	1994	373/4	959	93/4	248	85%	219	26	660	18½	470	551/4	1403	17	432	181/2	470	163//8	416	1456	660
10	93%	2378	45¾	1162	9¾	248	8%	219	32	813	21½	546	67½	1715	18	457	18½	470	16%	416	2230	1012

III z FORENSIC SPACE

DETAIL

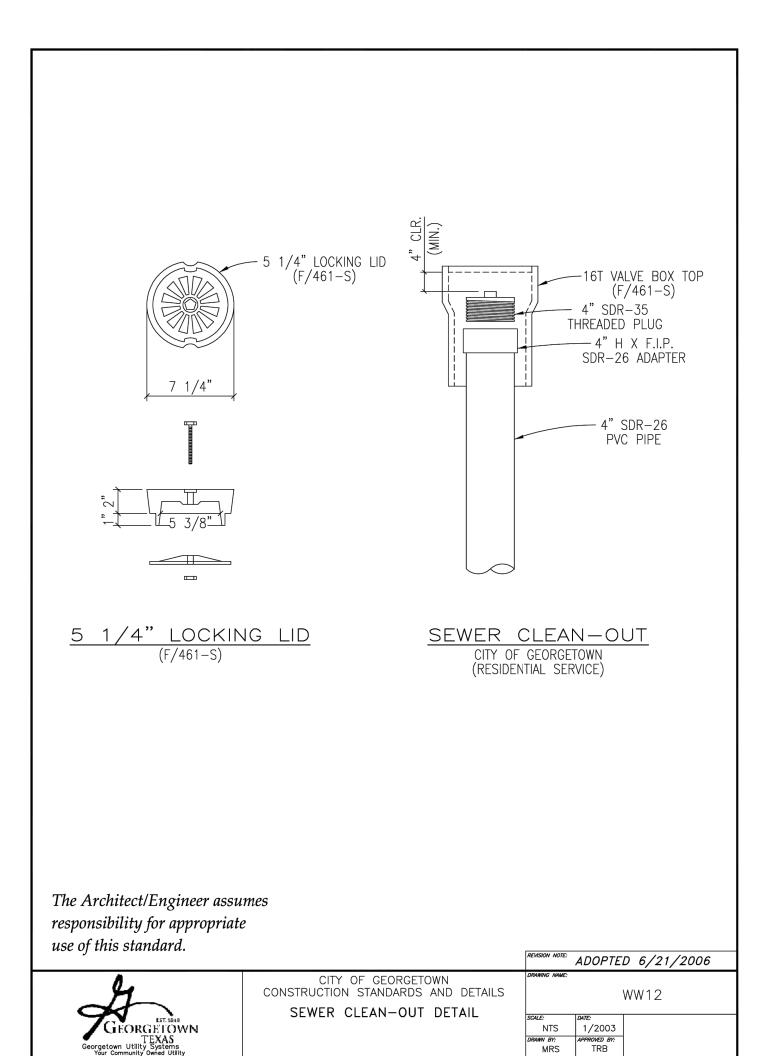
WATER

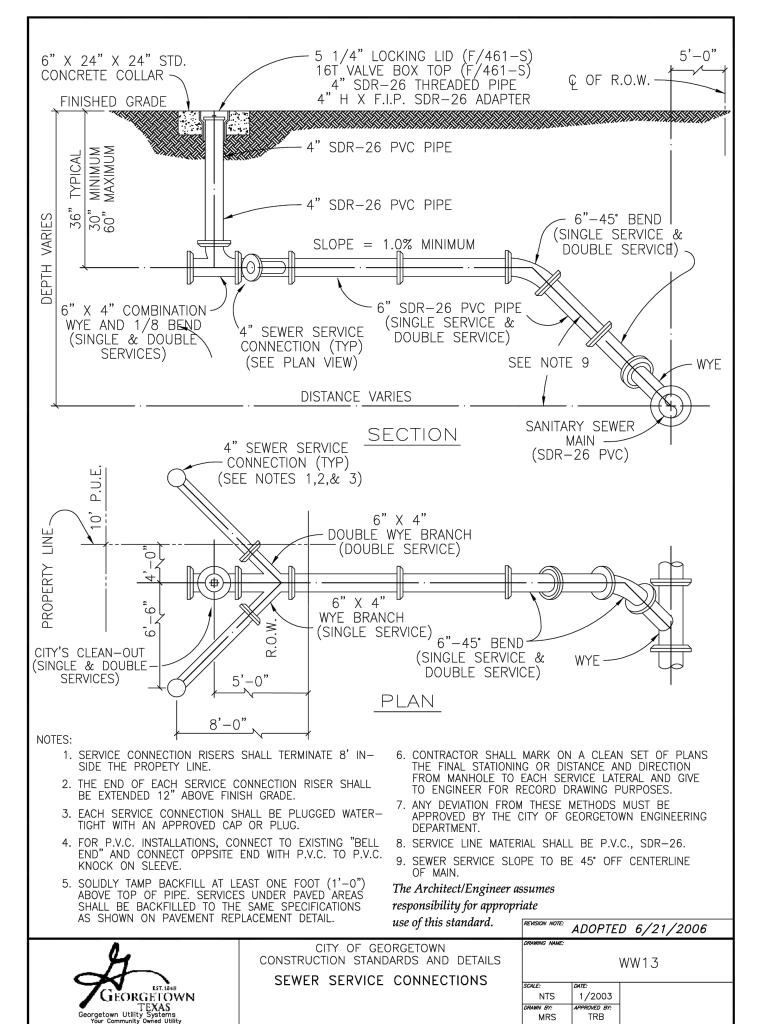
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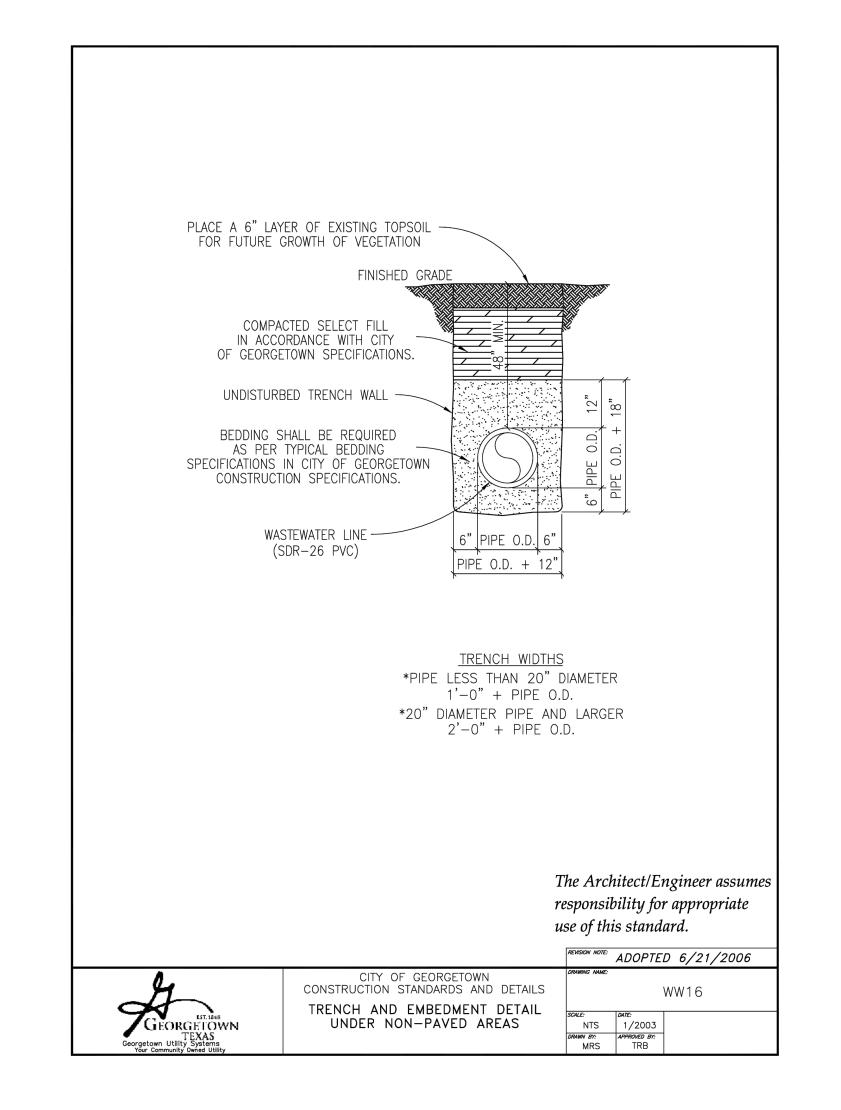
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DRAWN BY: APPROVED BY: DATE: 7/30/2024 DWG NAME: C6.0 UTILITY PLAN.DWG JOB NO:

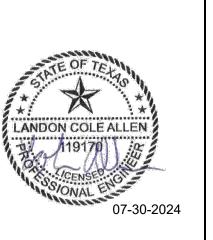
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OF-

FORENSIC SPACES
MARKET STREET | GEORGETOWN, TX

REVISION APPI

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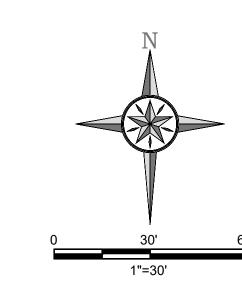
DATE: 7/30/2024

DWG NAME: C6.0 UTILITY PLAN.DWG

JOB NO:

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- THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL EROSION CONTROL AND WATER QUALITY REQUIREMENTS, LAWS, AND ORDINANCES THAT APPLY TO THE CONSTRUCTION SITE LAND DISTURBANCE. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE "TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE
- ELIMINATION SYSTEM TXR 150000".
- EROSION CONTROL DEVICES SHOWN ON THE EROSION CONTROL PLAN FOR THE PROJECT SHALL BE INSTALLED PRIOR TO THE START OF LAND
- ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THE PROJECT. CONTRACTOR IS SOLELY RESPONSIBLE FOR INSTALLATION, IMPLEMENTATION, MAINTENANCE, AND EFFECTIVENESS OF ALL EROSION CONTROL DEVICES, BEST MANAGEMENT PRACTICES (BMPS), AND FOR UPDATING THE EROSION CONTROL PLAN DURING CONSTRUCTION AS FIELD CONDITIONS
- CONTRACTOR SHALL DOCUMENT THE DATES OF INSTALLATION, MAINTENANCE OR MODIFICATION, AND REMOVAL FOR EACH BMP EMPLOYED IN THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE.
- AS STORM SEWER INLETS ARE INSTALLED ON-SITE, TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED AT EACH INLET PER APPROVED
- THE EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL THE AREA IT PROTECTS HAS BEEN PERMANENTLY STABILIZED CONTRACTOR SHALL PROVIDE ADEQUATE EROSION CONTROL DEVICES NEEDED DUE TO PROJECT PHASING. CONTRACTOR SHALL OBSERVE THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES AND MAKE FIELD ADJUSTMENTS AND MODIFICATIONS AS
- NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE. IF THE EROSION CONTROL DEVICES DO NOT EFFECTIVELY CONTROL EROSION AND PREVENT SEDIMENTATION FROM WASHING OFF THE SITE, THEN THE CONTRACTOR SHALL NOTIFY THE ENGINEER OFF-SITE SOIL BORROW, SPOIL, AND STORAGE AREAS (IF APPLICABLE) ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMP'S TO CONTROL EROSION AND SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT. CONTRACTOR IS

RESPONSIBLE FOR MODIFYING THE SWPPP AND EROSION CONTROL PLAN TO INCLUDE BMPS FOR ANY OFF-SITE AREAS THAT ARE NOT ANTICIPATED OR

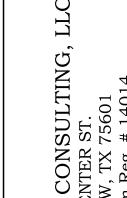
- SHOWN ON THE EROSION CONTROL PLAN. 12. ALL STAGING, STOCKPILES, SPOIL, AND STORAGE SHALL BE LOCATED SUCH THAT THEY WILL NOT ADVERSELY AFFECT STORM WATER QUALITY. PROTECTIVE MEASURES SHALL BE PROVIDED IF NEEDED TO ACCOMPLISH THIS REQUIREMENT, SUCH AS COVERING OR ENCIRCLING THE AREA WITH AN
- CONTRACTORS SHALL INSPECT ALL EROSION CONTROL DEVICES, BMPS, DISTURBED AREAS, AND VEHICLE ENTRY AND EXIT AREAS WEEKLY AND WITHIN 24 HOURS OF ALL RAINFALL EVENTS OF 0.5 INCHES OR GREATER, AND KEEP A RECORD OF THIS INSPECTION IN THE SWPPP BOOKLET IF APPLICABLE, TO VERIFY THAT THE DEVICES AND EROSION CONTROL PLAN ARE FUNCTIONING PROPERLY
- CONTRACTOR SHALL CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE AT ALL PRIMARY POINTS OF ACCESS IN ACCORDANCE WITH CITY SPECIFICATIONS. CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC USES THE STABILIZED ENTRANCE AT ALL TIMES FOR ALL
- SITE ENTRY AND EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING AND FLOWING OF SEDIMENT AND DIRT ONTO
- OFF-SITE ROADWAYS. ALL SEDIMENT AND DIRT FROM THE SITE THAT IS DEPOSITED ONTO AN OFF-SITE ROADWAY SHALL BE REMOVED IMMEDIATELY. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL SILT AND DEBRIS FROM THE AFFECTED OFF-SITE ROADWAYS THAT ARE A RESULT OF THE
- CONSTRUCTION, AS REQUESTED BY OWNER AND CITY. AT A MINIMUM, THIS SHOULD OCCUR ONCE PER DAY FOR THE OFF-SITE ROADWAYS. WHEN WASHING OF VEHICLES IS REQUIRED TO REMOVE SEDIMENT PRIOR TO EXITING THE SITE, IT SHALL BE DONE IN AN AREA STABILIZED WITH
- CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP BMP. CONTRACTOR SHALL INSTALL A TEMPORARY SEDIMENT BASIN FOR ANY ON-SITE DRAINAGE AREAS THAT ARE GREATER THAN 10 ACRES. PER TCEQ ANI
- CITY STANDARDS. IF NO ENGINEERING DESIGN HAS BEEN PROVIDED FOR A SEDIMENTATION BASIN ON THESE PLANS, THEN THE CONTRACTOR SHALL ARRANGE FOR AN APPROPRIATE DESIGN TO BE PROVIDED.
- ALL FINES IMPOSED FOR SEDIMENT OR DIRT DISCHARGED FROM THE SITE SHALL BE PAID BY THE RESPONSIBLE CONTRACTOR. WHEN SEDIMENT OR DIRT HAS CLOGGED THE CONSTRUCTION ENTRANCE VOID SPACES BETWEEN STONES OR DIRT IS BEING TRACKED ONTO A
- ROADWAY, THE AGGREGATE PAD MUST BE WASHED DOWN OR REPLACED. RUNOFF FROM THE WASH-DOWN OPERATION SHALL NOT BE ALLOWED TO DRAIN DIRECTLY OFF SITE WITHOUT FIRST FLOWING THROUGH ANOTHER BMP TO CONTROL SEDIMENTATION. PERIODIC RE-GRADING OR NEW STONE MAY BE REQUIRED TO MAINTAIN THE EFFECTIVENESS OF THE CONSTRUCTION ENTRANCE.
- TEMPORARY SEEDING OR OTHER APPROVED STABILIZATION SHALL BE INITIATED WITHIN 14 DAYS OF THE LAST DISTURBANCE OF ANY AREA, UNLESS ADDITIONAL CONSTRUCTION IN THE AREA IS EXPECTED WITHIN 21 DAYS OF THE LAST DISTURBANCE.
- CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING CONSTRUCTION, ALWAYS CLEANING UP DIRT, LOOSE MATERIAL, AND TRASH AS CONSTRUCTION PROGRESSES.
- 23. UPON COMPLETION OF FINE GRADING, ALL SURFACES OF DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED. STABILIZATION IS ACHIEVED WHEN THE AREA IS EITHER COVERED BY PERMANENT IMPERVIOUS STRUCTURES, SUCH AS BUILDINGS, SIDEWALK, PAVEMENT, OR A UNIFORM PERENNIAL VEGETATIVE COVER
- 24. AT THE CONCLUSION OF THE PROJECT, ALL INLETS, DRAIN PIPE, CHANNELS, DRAINAGEWAYS AND BORROW DITCHES AFFECTED BY THE CONSTRUCTION SHALL BE DREDGED, AND THE SEDIMENT GENERATED BY THE PROJECT SHALL BE REMOVED AND DISPOSED IN ACCORDANCE WITH APPLICABLE

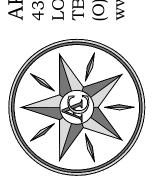
STORM WATER DISCHARGE AUTHORIZATION

- CONTRACTOR SHALL COMPLY WITH ALL TCEQ AND EPA STORM WATER POLLUTION PREVENTION REQUIREMENTS.
- CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE TCEQ GENERAL PERMIT TO DISCHARGE UNDER THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM TXR 150000.
- THE CONTRACTOR SHALL ENSURE THAT ALL PRIMARY OPERATORS SUBMIT A NOI TO TCEQ AT LEAST SEVEN DAYS PRIOR TO COMMENCING CONSTRUCTION (IF APPLICABLE), OR IF UTILIZING ELECTRONIC SUBMITTAL, PRIOR TO COMMENCING CONSTRUCTION. ALL PRIMARY OPERATORS SHALL PROVIDE A COPY OF THE SIGNED NOLTO THE OPERATOR OF ANY MS4 (TYPICALLY THE CITY) RECEIVING DISCHARGE FROM THE SITE
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IF APPLICABLE, INCLUDING POSTING SITE NOTICE, INSPECTIONS, DOCUMENTATION, AND SUBMISSION OF ANY INFORMATION REQUIRED BY THE TCEQ AND EPA (E.G.
- ALL CONTRACTORS AND SUBCONTRACTORS PROVIDING SERVICES RELATED TO THE SWPPP SHALL SIGN THE REQUIRED CONTRACTOR CERTIFICATION
- STATEMENT ACKNOWLEDGING THEIR RESPONSIBILITIES AS SPECIFIED IN THE SWPPP. A COPY OF THE SWPPP, INCLUDING NOI, SITE NOTICE, CONTRACTOR CERTIFICATIONS, AND ANY REVISIONS, SHALL BE SUBMITTED TO THE CITY BY THE CONTRACTOR AND SHALL BE RETAINED ON-SITE DURING CONSTRUCTION.
- A NOTICE OF TERMINATION (NOT) SHALL BE SUBMITTED TO TCEQ BY ANY PRIMARY OPERATOR WITHIN 30 DAYS AFTER ALL SOIL DISTURBING ACTIVITIES
- AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM VEGETATIVE COVER HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY STRUCTURES, A TRANSFER OF OPERATIONAL CONTROL HAS OCCURRED, OR THE OPERATOR HAS OBTAINED ALTERNATIVE AUTHORIZATION UNDER A DIFFERENT PERMIT. A COPY OF THE NOT SHALL BE PROVIDED TO THE OPERATOR OF ANY MS4 RECEIVING DISCHARGE FROM THE SITE.

DISTURBANCE & VEGETATION NOTES

- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL PREPARE, OR OBTAIN A COPY OF, A STORMWATER POLLUTION PREVENTION PLAN (SWPPP), IF NECESSARY, IN ACCORDANCE WITH UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) REQUIREMENTS, FILE A NOTICE OF INTENT (NOI), APPLICATION, AND FEE TO THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ). CONTRACTOR SHALL MAINTAIN THE SWPPP NOTEBOOK AND WEEKLY REPORTS ONSITE AT ALL TIMES IN COMPLIANCE WITH USEPA AND TCEQ REQUIREMENTS. MAINTENANCE OF EROSION CONTROL MEASURES AND REQUIRED REPORTING SHALL BE CONTINUOUS THROUGHOUT CONSTRUCTION. PREPARATION OF THE SWPPP AND MAINTENANCE OF THE EROSION
- CONTROL MEASURES SHALL BE SUBSIDIARY TO THE OVERALL PROJECT COST UNLESS PROVIDED FOR OTHERWISE. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES. CONTRACTOR SHALL CONTACT 811 AND VERIFY LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO STARTING
- CONSTRUCTION. EROSION CONTROL DEVICES AS SHOWN ON THE PHASE I PLAN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS FOR THIS PROJECT. CHANGES ARE TO BE APPROVED BEFORE CONSTRUCTION BY THE DESIGN ENGINEER OR THE AUTHORITY HAVING JURISDICTION.
- ALL SLOPED AREAS SHALL BE HYDROMULCHED OR SODDED IMMEDIATELY AFTER GRADES HAVE BEEN ESTABLISHED. CONTRACTOR SHALL BE RESPONSIBLE FOR THE ESTABLISHMENT OF ADEQUATE VEGETATION IN DISTURBED AREAS. A MINIMUM OF 90% COVERAGE OF HEALTHY VEGETATION WILL BE REQUIRED PRIOR TO COMPLETION OF THE PROJECT.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND/OR DEPTH OF ANY EXISTING UTILITIES. THE UTILITIES SHOWN IN THESE PLANS ARE APPROXIMATED BASED ON AVAILABLE INFORMATION AND SHOULD NOT BE RELIED ON AS EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE
- APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. CONTRACTOR TO STRIP AND STOCKPILE A MINIMUM OF 4" TOP SOIL TO BE REUSED AS FINAL TOPSOIL LAYER UPON COMPLETION OF GRADING.





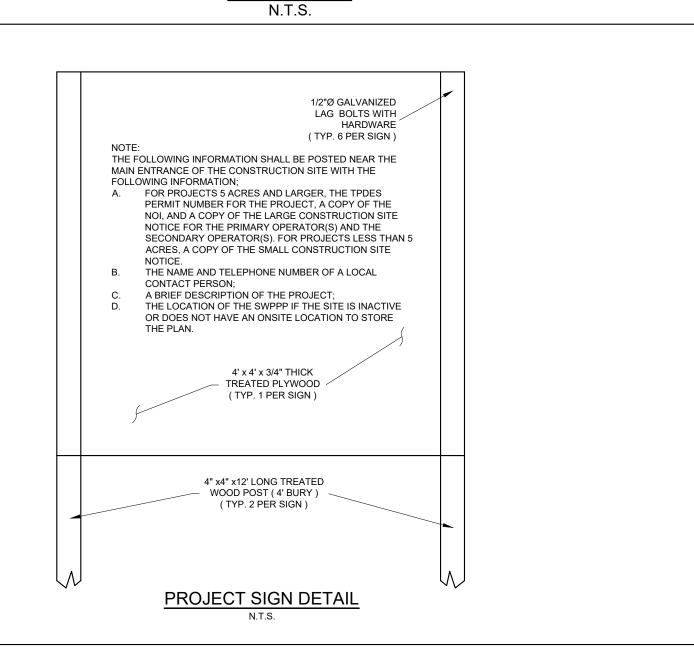


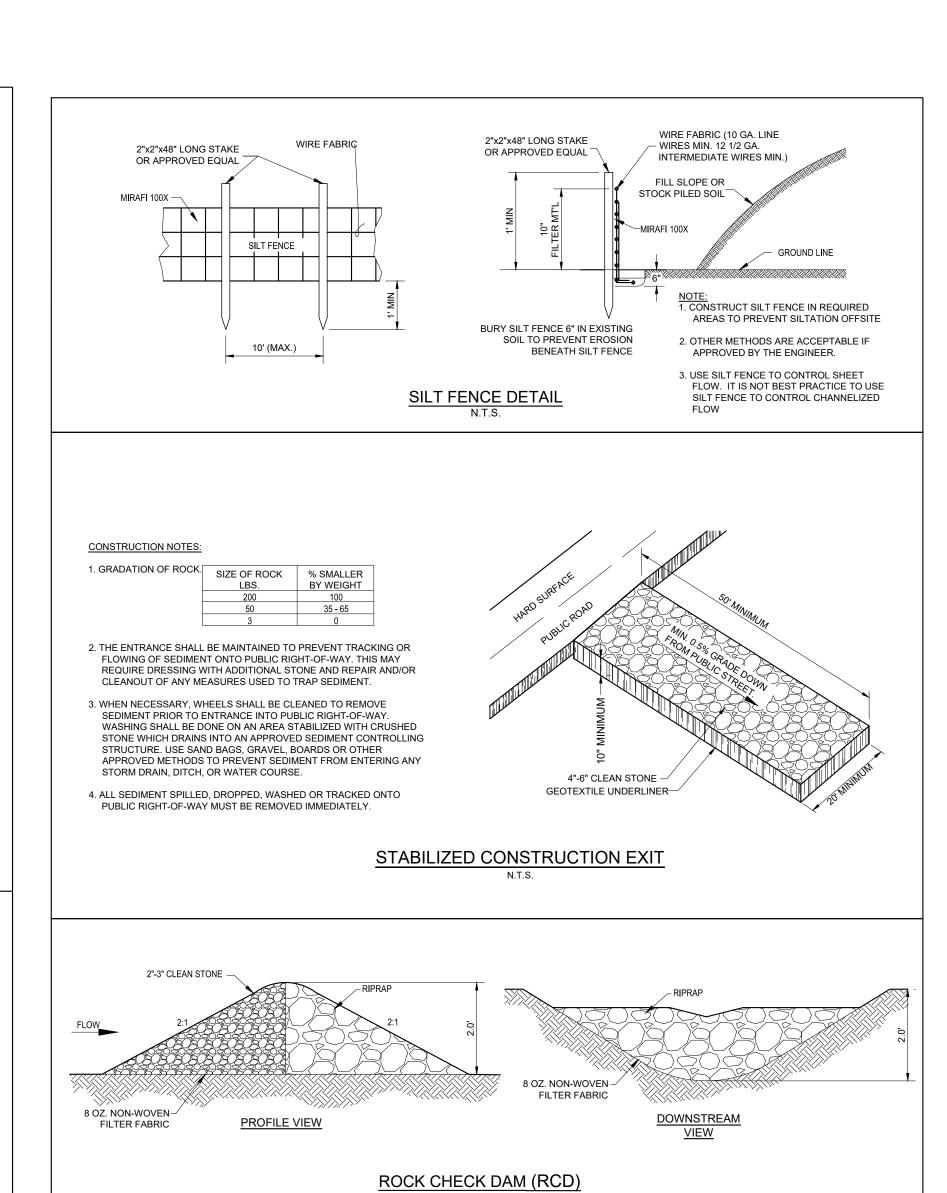
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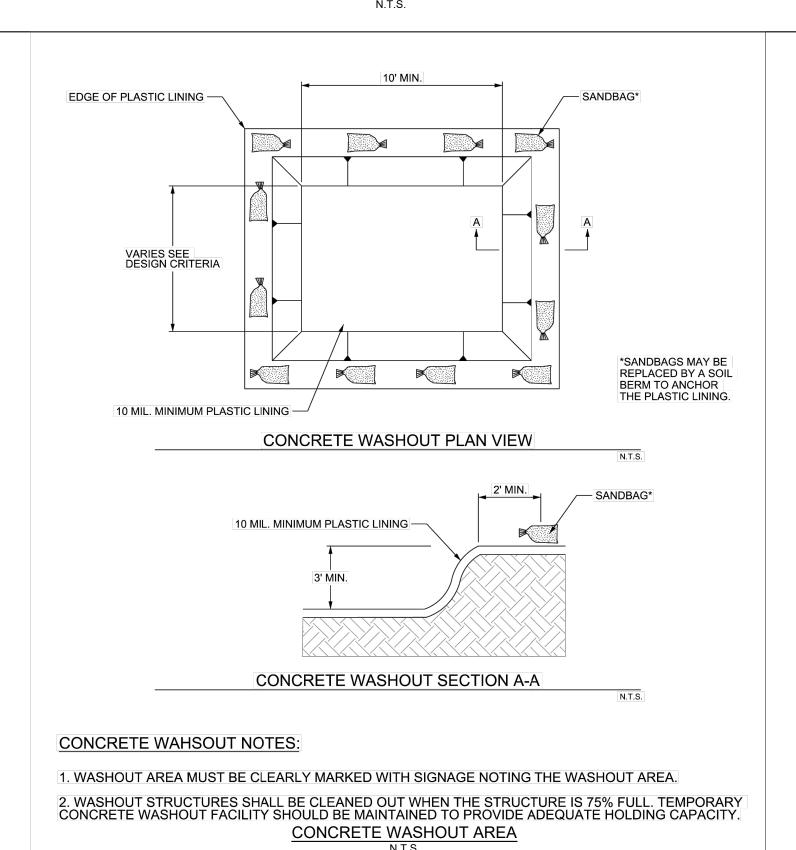
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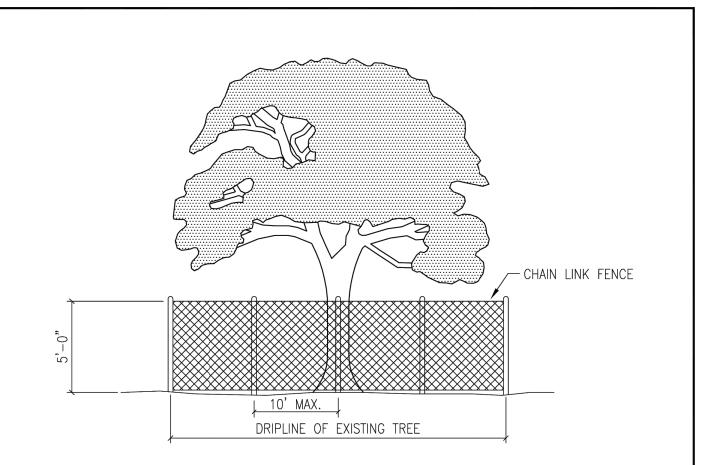
TE	NO.	REVISION	APPD.

DRAWN BY: APPROVED BY: DWG NAME: JOB NO:









NOTES:

- 1. TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
- 2. FENCES SHALL COMPLETELY SURROUND THE TREE, OR CLUSTERS OF TREES; WILL BE LOCATED AT THE OUTERMOST LIMIT OF THE TREE BRANCHES (DRIPLINE), AND WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
- A. SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MATERIALS.

 B. ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN SIX INCHES (6") CUT OR FILL,
- OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE CITY.

 C. WOUNDS TO EXPOSED ROOTS, TRUNKS OR LIMBS BY MECHANICAL EQUIPMENT.
- D. OTHER ACTIVITIES DETRIMENTAL TO TREES, SUCH AS CHEMICAL STORAGE, CEMENT TRUCK CLEANING AND FIRE.
- 3. EXCEPTIONS TO INSTALLING FENCES AT TREE DRIPLINES MAY BE PERMITTED IN THE FOLLOWING CASES:

 A. WHERE PERMEABLE PAVING IS TO BE INSTALLED, ERECT THE FENCE AT THE OUTER LIMITS OF THE PERMEABLE PAVING AREA.
- B. WHERE TREES ARE CLOSE TO PROPOSED BUILDINGS, ERECT THE FENCE NO CLOSER THAN SIX FEET (6'-0") TO BUILDING.

The Architect/Engineer assumes responsibility for appropriate use of this standard.



CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TREE PROTECTION —
CHAIN LINK FENCE

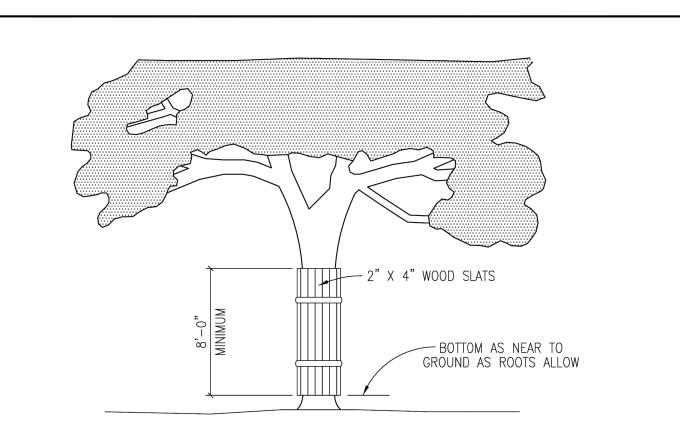
REVISION NOTE: ADOPTED 6/21/2006

DRAWING NAME:

EC09

SCALE: NTS 1/2003

DRAWIN 81: APPROVED 81:
MRS TRB



NOTES:

- 1. WHERE ANY EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN FOUR FEET (4'-0") TO A TREE TRUNK; PROTECT THE TRUNK WITH STRAPPED-ON-PLANKING TO A HEIGHT OF EIGHT FEET (8'-0"), OR TO THE LIMITS OF LOWER BRANCHING IN ADDITION TO THE REDUCED FENCING PROVIDED.
- 2. ANY ROOTS EXPOSED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED FLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL AS SOON AS POSSIBLE. IF EXPOSED ROOT AREAS ARE NOT BACKFILLED WITHIN TWO (2) DAYS, COVER THEM WITH ORGANIC MATERIAL IN A MANNER WHICH REDUCES SOIL TEMPERATURE, AND MINIMIZES WATER LOSS DUE TO EVAPORATION.
- 3. PRIOR EXCAVATION OR GRADE CUTTING WITHIN TREE DRIPLINE. MAKE A CLEAN CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONES WITH A ROCK SAW OR SIMILAR EQUIPMENT, TO MINIMIZE DAMAGE TO REMAINING ROOTS.
- 4. TREES MOST HEAVILY IMPACTED BY CONSTRUCTION ACTIVITIES SHOULD BE WATERED DEEPLY ONCE A WEEK DURING PERIODS OF HOT, DRY WEATHER. TREE CROWNS SHOULD BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
- 5. ANY TRENCHING REQUIRED FOR THE INSTALLATION OF LANDSCAPE IRRIGATION SHALL BE PLACED AS FAR FROM EXISTING TREE TRUNKS AS POSSIBLE.
- 6. NO LANDSCAPE TOPSOIL DRESSING GREATER THE FOUR INCHES (4") SHALL BE PERMITTED WITHIN THE DRIPLINE OF A TREE. NO SOIL IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
- 7. PRUNING TO PROVIDE CLEARANCE FOR STRUCTURES, VEHICULAR TRAFFIC AND EQUIPMENT SHALL TAKE PLACE BEFORE CONSTRUCTION BEGINS.

The Architect/Engineer assumes responsibility for appropriate use of this standard.



CITY OF GEORGETOWN
CONSTRUCTION STANDARDS AND DETAILS
TREE PROTECTION — WOOD SLATS

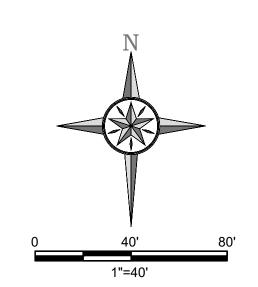
REVISION NOTE: ADOPTED 6/21/2006

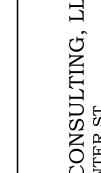
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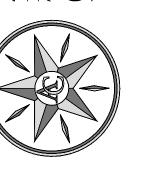
SCALE: DATE: NTS 1/2003
DRAWN BY: APPROVED BY: TRB

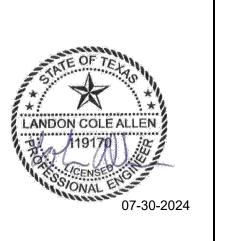






AKKON CONSULTING, I
431 N. CENTER ST.
LONGVIEW, TX 75601
TBPE Firm Reg. # 14014
(O) 903-720-4822
www.akron-consulting.com





SION CONTROL DETAILS

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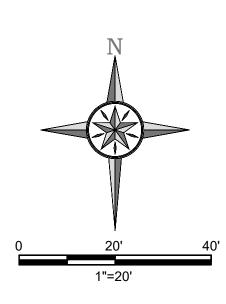
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DATE NO. REVISION APPD.

DRAWN BY:
APPROVED BY:
DATE:
DWG NAME:
JOB NO:

C7.1





LANDSCAPE LEGEND CM - CRAPE MYRTLE

GENERAL LANDSCAPE NOTES

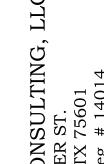
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE AUTHORITY HAVING JURISDICTION'S STANDARDS AND SPECIFICATIONS.
- PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND/OR DEPTH OF ANY EXISTING UTILITIES. THE UTILITIES SHOWN IN THESE PLANS ARE APPROXIMATED BASED ON AVAILABLE INFORMATION AND SHOULD NOT BE RELIED ON AS EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES.

LANDSCAPE DESIGN NOTES

- ALL DECOMPOSED GRANITE, MULCHED, AND/OR ROCKED AREAS TO BE SEPARATED FROM GRASS WITH METAL OR POLYBOARD EDGING.
- DECOMPOSED GRANITE, MULCH, AND ROCK MATERIAL SHALL BE UNIFORM ACROSS ALL AREAS.
- TREES PROPOSED OUTSIDE OF DEFINED LANDSCAPE AREAS SHALL HAVE MULCH INSTALLED AROUND THE TREE AT A DEPTH NO GREATER THAN 4 INCHES.
- PROPOSED TREES SHALL BE A MINIMUM SIZE OF 10 GALLONS.
- PROPOSED SHRUBS SHALL BE A MINIMUM SIZE OF 3 GALLONS.
- BERMUDA HYDROMULCH SHALL BE APPLIED TO ALL DISTURBED
- AREAS WHERE GRASS IS INTENDED.
- LANDSCAPE CONTRACTOR SHALL DETERMINE THE AVAILABILITY AND VIABILITY OF SPECIFIED PLANTS BEFORE ORDERING.
- LANDSCAPE CONTRACTOR SHALL DETERMINE THE VIABILITY OF PLANTS SHOWN AND PLANTING LOCATIONS. IF CONFLICTS ARISE, OR ALTERNATIVE OPTIONS ARE PREFERRED, LANDSCAPE CONTRACTOR SHALL DISCUSS WITH THE OWNER AND ACQUIRE WRITTEN PERMISSION FOR MODIFICATIONS.
- ADDITIONAL PLANTS MAY BE ADDED AT THE DISCRETION OF THE LANDSCAPE CONTRACTOR WITH WRITTEN PERMISSION BY OWNER.

LANDSCAPE IRRIGATION NOTES

- LANDSCAPE IRRIGATION PLANS SHALL BE PREPARED AND SUBMITTED FOR APPROVAL BY LANDSCAPE IRRIGATOR LICENSED BY THE STATE OF TEXAS.
- PLANS SHALL INCLUDE LOCATION OF ANY SUB-SURFACE CONDUIT AND/OR UTILITIES PROPOSED FOR THE PURPOSES OF LANDSCAPE IRRIGATION.
- LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL SUB-SURFACE LANDSCAPE CONDUIT AND/OR UTILITIES ARE INSTALLED PRIOR TO ANY PAVEMENT CONSTRUCTION.







Ш̈́Z FORENSIC SPAC

LANDSCAP

DATE NO. REVISION

DRAWN BY: APPROVED BY: DWG NAME: JOB NO:

C8.0

TCEQ FORM 0600 ATTACHMENT G – INSPECTION, MAINTENANCE, REPAIR, AND RETROFIT PLAN

Batch detention basins may have somewhat higher maintenance requirements than an extended detention basin since they are active stormwater controls. The maintenance activities are identical to those of extended detention basins with the addition of maintenance and inspections of the automatic controller and the valve at the outlet.

Inspections

Inspections should take place a minimum of twice a year. One inspection should take place during wet weather to determine if the basin is meeting the target detention time of 12 hours and a drawdown time of no more than 48 hours. The remaining inspections should occur between storm events so that manual operation of the valve and controller can be verified. The level sensor in the basin should be inspected and any debris or sediment in the area should be removed. The outlet structure and the trash screen should be inspected for signs of clogging. Debris and sediment should be removed from the orifice and outlet(s) as described in previous sections. Debris obstructing the valve should be removed. During each inspection, erosion areas inside and downstream of this BMP should be identified and repaired/revegetated immediately.

Mowing

The basin, basin side-slopes, and embankment of the basin must be mowed to prevent woody growth and control weeds. A mulching mower should be used, or the grass clippings should be caught and removed. Mowing should take place at least twice a year, or more frequently if vegetation exceeds 18 inches in height. More frequent mowing to maintain aesthetic appeal may be necessary in landscaped areas.

Litter and Debris Removal

Litter and debris removal should take place at least twice a year, as part of the periodic mowing operations and inspections. Debris and litter should be removed from the surface of the basin. Particular attention should be paid to floatable debris around the outlet structure. The outlet should be checked for possible clogging or obstructions and any debris removed.

Erosion control

The basin side slopes and embankment all may periodically suffer from slumping and erosion. To correct these problems, corrective action, such as regrading and revegetation, may be necessary. Correction of erosion control should take place whenever required based on the periodic inspections.

Nuisance Control

Standing water or soggy conditions may occur in the basin. Some standing water may occur after a storm event since the valve may close with 2 to 3 inches of water in the basin. Some flow into the basin may also occur between storms due to spring flow and residential water use that

enters the storm sewer system. Twice a year, the facility should be evaluated in terms of nuisance control (insects, weeds, odors, algae, etc.).

Structural Repairs and Replacement

With each inspection, any damage to structural elements of the basin (pipes, concrete drainage structures, retaining walls, etc.) should be identified and repaired immediately. An example of this type of repair can include patching of cracked concrete, sealing of voids, removal of vegetation from cracks and joints. The various inlet/outlet structures in a basin will eventually deteriorate and must be replaced.

Sediment Removal

A properly designed batch detention basin will accumulate quantities of sediment over time. The accumulated sediment can detract from the appearance of the facility and reduce the pollutant removal performance of the facility. The sediment also tends to accumulate near the outlet structure and can interfere with the level sensor operation. Sediment shall be removed from the basin at least every 5 years, when sediment depth exceeds 6 inches, when the sediment interferes with the level sensor or when the basin does not drain within 48 hours. Care should be taken not to compromise the basin lining during maintenance.

Logic Controller

The Logic Controller should be inspected as part of the twice yearly investigations. Verify that the external indicators (active, cycle in progress) are operating properly by turning the controller off and on, and by initiating a cycle by triggering the level sensor in the basin. The valve should be manually opened and closed using the open/close switch to verify valve operation and to assist in inspecting the valve for debris. The solar panel should be inspected and any dust or debris on the panel should be carefully removed. The controller and all other circuitry and wiring should be inspected for signs of corrosion, damage from insects, water leaks, or other damage. At the end of the inspection, the controller should be reset.

Manufacturer Maintenance Information:

Additional maintenance information from Manufacturer's Spec sheet:

8.1 Grease

The SmartPOND valve includes a grease fitting on the valve itself which should be greased twice per year. It is also recommended that a thick, mildly heat-resistant grease be used to avoid grease melting out of the groove in warmer temperatures.

8.2 Flange Bolts

There are 6 bolts connecting the SmartPOND valve's flange to the outfall pipe or fixture. During routine maintenance intervals, these bolts should be checked for tightness. All bolts should be tightened evenly.

8.3 Perforated Riser

Silt, sediment, and debris can build up around the perforated riser with time. An annual inspection of the unit is necessary to ensure that excess debris or sediment has not limited the drainage capacity of the perforated riser. To access the perforated riser for maintenance, lift the trash cage off of the riser, dig out any accumulated sediment, and clear all perforations.

8.4 Trash Cage

As a part of routine maintenance, it is advisable to remove trash and debris that has accumulated on the trash cage and properly dispose.

8.5 Solar Panel

On all inspection visits, it is necessary to confirm that the solar panel is facing south and is well secured. The solar panel is commonly utilized by birds and insects. It is important to keep the surface clean of bird litter, insect nests and debris in order to maintain optimal performance.

8.6 Battery

Over time, battery terminals may corrode. Check annually for corrosion and clean as needed. The battery should be replaced every 4 to 6 years.

8.7 Storage

The SmartPOND valve is shipped in a near-fully assembled configuration and should be stored likewise. The systems are transported and stored on pallets and must remain secured via straps or steel bands to said pallet at all times. The solar panel is not installed at times of transport or storage and should not be installed until the unit is ready to begin operation. The battery may be stored inside the electronics box and if removed, should never be stored on a concrete surface.

General Information

The responsible party for maintenance shall keep records of all inspections, maintenance, repairs, and, if necessary, retrofit activity. All inspections and maintenance activity records shall be maintained and made available upon request to TCEQ officials.

Upon transfer of ownership or maintenance responsibility, the seller must inform the buyer of all requirements of the BMP maintenance. TCEQ must be notified and receive the form "TCEQ-16023 Change in Responsibility for Maintenance on Permanent Best Management Practices and Measures." In addition, TCEQ shall receive a signed, dated copy of this maintenance plan from the new owner.

An amended copy of this document will be provided to the Texas Commission on Environmental Quality within (30) days of any changes in the following information.

Responsible Party for Maintenance:	Forensic Spaces LLC
	Owner - Dr. Satish Chundru
Address:	12160 W. Parmer Lane Suite 130-108
City, State, Zip:	Cedar Park, TX 78613
Telephone Number:	305-239-8081
Signature of Responsible Party:	Orch
Date:	7-16-2024

TCEQ FORM 0600 ATTACHMENT H – PILOT-SCALE FIELD TESTING PLAN

Not Applicable

TCEQ FORM 0600 ATTACHMENT I – MEASURES FOR MINIMIZING SURFACE STREAM CONTAMINATION

Not Applicable

Agent Authorization Form

For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

1_ 50	tish Chundru	
	Print Name	
	President	
	Title - Owner/President/Other	
of	Forensic Spaces LLC Corporation/Partnership/Entity Name	
	Corporation/Partnership/Entity Name	
have authorized	Landon Cole Allen, P.E.	
	Print Name of Agent/Engineer	
of	Akron Consulting LLC	
	Print Name of Firm	

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

- The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to \$10,000 per day per violation.
- For those submitting an application who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.
- Application fees are due and payable at the time the application is submitted. The
 application fee must be sent to the TCEQ cashier or to the appropriate regional office.
 The application will not be considered until the correct fee is received by the
 commission.
- A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.
- No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

7-16-202H Date

THE STATE OF WAS \$

County of Williamson \$

BEFORE ME, the undersigned authority, on this day personally appeared South Complex known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 16 day of July , 200

Courtney Marie Heyne
My Commission Expires
12/16/2025
Notary ID
133495047

NOTARY PUBLIC

Typed or Printed Name of Notary

MY COMMISSION EXPIRES: 12/16/2015

Application Fee Form

Texas Commission on Environmental Quality Name of Proposed Regulated Entity: Hill Country Forensics Regulated Entity Location: 136 Market St. Georgetown, TX 78626 Name of Customer: Dr. Satish Chundru Contact Person: Satish Chundru Phone: 305-239-8081 Customer Reference Number (if issued):CN Regulated Entity Reference Number (if issued):RN ______ **Austin Regional Office (3373)** Havs Travis X Williamson San Antonio Regional Office (3362) Medina Uvalde Bexar Comal Kinney Application fees must be paid by check, certified check, or money order, payable to the Texas Commission on Environmental Quality. Your canceled check will serve as your receipt. This form must be submitted with your fee payment. This payment is being submitted to: X Austin Regional Office San Antonio Regional Office Mailed to: TCEQ - Cashier Overnight Delivery to: TCEQ - Cashier **Revenues Section** 12100 Park 35 Circle Mail Code 214 Building A, 3rd Floor P.O. Box 13088 Austin, TX 78753 (512)239-0357 Austin, TX 78711-3088 Site Location (Check All That Apply): Recharge Zone Contributing Zone **Transition Zone** Type of Plan Size Fee Due Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling Acres Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks Acres Water Pollution Abatement Plan, Contributing Zone Plan: Non-residential 2.788 Acres | \$ 4,000 Sewage Collection System L.F. | \$ Lift Stations without sewer lines Acres \$ Underground or Aboveground Storage Tank Facility Tanks | \$ Each | \$ Piping System(s)(only) Each \$ Exception Each | \$ Extension of Time Signature: Lole alle Date: 2024-07-01

Application Fee Schedule

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

Water Pollution Abatement Plans and Modifications

Contributing Zone Plans and Modifications

Project	Project Area in Acres	Fee
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional,	< 1	\$3,000
multi-family residential, schools, and other sites	1 < 5	\$4,000
where regulated activities will occur)	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

Organized Sewage Collection Systems and Modifications

Project	Cost per Linear Foot	Minimum Fee- Maximum Fee
Sewage Collection Systems	\$0.50	\$650 - \$6,500

Underground and Aboveground Storage Tank System Facility Plans and Modifications

Project	Cost per Tank or Piping System	Minimum Fee- Maximum Fee
Underground and Aboveground Storage Tank Facility	\$650	\$650 - \$6,500

Exception Requests

Project	Fee
Exception Request	\$500

Extension of Time Requests

Project	Fee
Extension of Time Request	\$150



TCEQ Core Data Form

For detailed instructions on completing this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for	Submissi	on (If oth	her is checked	please descri	pe in space pr	ovided.)							
New Pern	nit, Registra	tion or A	authorization	Core Data Foi	m should be s	submitte	d with	the prog	ram application.)				
Renewal (Core Data Form should be submitted with the renewal form)								Other					
2. Customer	Reference	Numbe	er (if issued)		Follow this link to search for CN or RN numbers in			gulated Entity Re	ference	Number (if i	ssued)		
CN					Central R			RN	RN				
SECTIO	N II:	Cus	stome	Infor	matio	<u>n</u>							
4. General Customer Information 5. Effective				5. Effective	ve Date for Customer Information Updates (mm/dd/yyyy)								
New Custor	ner		U	pdate to Custo	omer Informat	tion		Char	nge in Regulated Ent	ity Owne	ership		
Change in L	egal Name (Verifiabl	e with the Tex	as Secretary o	of State or Tex	as Comp	troller	of Public	: Accounts)				
The Customer Name submitted here may be updated automatically based on what is current and active with the Texas Secretary of State (SOS) or Texas Comptroller of Public Accounts (CPA).													
6. Customer	Legal Nam	e (If an i	individual, pri	nt last name fi	rst: eg: Doe, J	lohn)			If new Customer,	enter pre	evious Custom	er below:	
Forensic Spaces LLC													
7. TX SOS/CPA Filing Number 8. TX S				8. TX State	. TX State Tax ID (11 digits)			9. Federal Tax ID 10. DUNS Num applicable)			Number (if		
805381233				32093310145				(9 digits)		иррисавіє)			
					990817781								
11. Type of Customer:								☐ Individual Part			nership: General Limited		
Government: City County Federal Local State Other Sole Proprietorship Other:													
12. Number of Employees 13. Independently Owned and Operated?													
☑ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher ☑ Yes ☐ No													
14. Customer Role (Proposed or Actual) – as it relates to the Regulated Entity listed on this form. Please check one of the following													
12160 W Parmer LN 15. Mailing													
	Suite 130-108												
Address:	City Cedar Park			State TX			ZIP 78613		ZIP + 4				
16. Country Mailing Information (if outside USA) 17. E-Mail Address (if applicable)													
	satchundru@yahoo.com												
10 Tolonhon	a Niverala au				10 Evtoncia	on or Co	da		20 Fav N	umbar	(if applicable)		

TCEQ-10400 (11/22) Page 1 of 3

(305) 283-3371	() -

SECTION III: Regulated Entity Information

21. General Regulated Entity Information (If 'New Regulated Entity" is selected, a new permit application is also required.)										
New Regulated Entity Update to Regulated Entity Name Update to Regulated Entity Information										
The Regulated Entity Name submitted may be updated, in order to meet TCEQ Core Data Standards (removal of organizational endings such as Inc, LP, or LLC).										
22. Regulated Entity Nam	e (Enter nam	e of the site wher	re the regulated actio	n is taking plo	ace.)					
Hill Country Forensics										
23. Street Address of the Regulated Entity:	136 Market	Street								
(No PO Boxes)	City	Georgetown	State	TX	ZIP	78626	ZIP + 4			
24. County	Williamson									
		If no Stree	et Address is provi	ded, fields 2	25-28 are re	quired.				
25. Description to										
Physical Location:										
26. Nearest City						State	Nea	Nearest ZIP Code		
Latitude/Longitude are required and may be added/updated to meet TCEQ Core Data Standards. (Geocoding of the Physical Address may be used to supply coordinates where none have been provided or to gain accuracy).										
27. Latitude (N) In Decima	al:			28. L	.ongitude (\	V) In Decimal:				
Degrees	Minutes		Seconds	Degre	ees	Minutes		Seconds		
29. Primary SIC Code	30.	Secondary SIC	Code	31. Prima	ry NAICS Co	ode 32. Se	Secondary NAICS Code			
(4 digits)	gits)			(E or 6 digits)			6 digits)			
8099 8011				541990		621399				
33. What is the Primary Business of this entity? (Do not repeat the SIC or NAICS description.)										
Forensic Pathology Office and Lab										
24 Mailing	136 Marke	t St								
34. Mailing										
Address:	City	Georgetown	State	тх	ZIP	78626	ZIP + 4			
35. E-Mail Address: satchundru@yahoo.com								I		
36. Telephone Number										
			37. Extension or	Code	38. F	ax Number (if applic	cable)			

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form. See the Core Data Form instructions for additional guidance.

TCEQ-10400 (11/22) Page 2 of 3

☐ Dam Safety		☐ Districts ☐ Edwards Aquifer		☐ Emissions Inv		entory Air	☐ Industrial Hazardous Waste		
Municipal Solid Waste		New Source Review Air	OSSF		Petroleum St		□ PWS		
Sludge		Storm Water	☐ Title V Air		Tires		Used Oil		
☐ Voluntary Cl	eanup	☐ Wastewater	☐ Wastewater Agricul	ture	☐ Water Rights		Other:		
SECTION IV: Preparer Information									
40. Name: Landon Cole Allen 41. Title: Civil E					Civil Engine	gineer			
42. Telephone Number 43. Ext./Code 44. Fax Number 45. E-Mail Address									
(903) 452-0637			() - colea@akron-consulting			om			
SECTION V: Authorized Signature									
46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.									
Company: Akron Consulting LLC					Job Title: Project Engineer				
Name (In Print):			Phone: (903) 452-0637						
Signature:	Lole 1	Úl.				Date:	07-16-2024		

TCEQ-10400 (11/22) Page 3 of 3